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The Railway Wages Bargain

THE acceptance by the National Union of Railwaymen of the British Transport Commission offer of an increase which brings railway wages to 6 per cent over the level obtaining before the rise awarded in December and has been accepted by the other two railway unions, means a commitment for the Commission of about a further £12,500,000 a year in outgoings. It was agreed during the negotiations before Christmas that a condition of a further wage award should be a comprehensive examination of the whole wage and salary structure and conference between the Commission and the unions to evolve ways of increasing the efficiency of railways—"not only" in the words of the statement issued at the time by the Ministry of Labour, "by such adjustments of wages and salaries as may result from the above examination, but by all other appropriate means." The wages increase, however, was to be awarded within two months, which has been done, whilst the review of the wages structure and ways to improve efficiency must take time. All that has been announced so far as to this part of implementing the agreement reached in December is a comment by a spokesman for the Commission that talks will take place soon on these matters. No doubt the fact that concessions of some sort, probably in hours of work and in other conditions, will have to be made by railwaymen to improve efficiency has been borne in mind by the unions. But it would have been reassuring to hear from them that they mean to abide by their undertaking. A factor which may influence the unions in favour of wholehearted efforts to improve the working of the railways is the fact that no reply has been received as yet to the Commission's application a month ago to the Minister of Transport for authority to raise railway rates by 10 per cent. Such applications made in the past to increase revenue largely to cover wage awards, have been granted with such little delay as to encourage the unions to consider them an automatic response justifying further wage demands. The Cabinet is said to be considering the Commission's latest application in the light of its effect on industrial costs and the cost of living. If this results in a refusal or in reduction in the rate increase sought, the duty of railwaymen to help find the money for their increased wages by making concessions where necessary in their working conditions to effect economies and otherwise improve operation will be more urgent than ever.

Denationalising Road Passenger Transport

NOW that the Thesiger Committee appointed to inquire into the licensing of road passenger services has reported to the Minister of Transport, as commented on editorially in our December 11, 1953, issue, organisations representing the non-nationalised bus undertakings suggest that the Government should exercise its powers under the Transport Act, 1953, to restore to private enterprise the nationalised sections of provincial road passenger transport. Those companies, all the shares of which are owned by the British Transport Commission, operate some 14,000 of the 53,600 provincial buses in the country. Because their company structure has been retained, their denationalisation, it is argued, would be much simpler than in the case of road haulage, in that there would be no need to dispose of assets. Under the existing law the B.T.C. can be ordered to divest itself of not more than 50 per cent of its shares in any bus or other company. The advocates of denationalisation, therefore, propose the formation in each case of a company to hold the 50 per cent, which would be offered to the public. In almost all the bus companies outside its complete control, the B.T.C. holds half the shares as successor to the former main-line railway companies which acquired their substantial financial interests in road transport businesses under powers granted them in 1928, and it is not proposed to alter this arrangement. The existence of these public-private enterprise companies is viewed as a precedent for the creation of similar partnerships in respect of the present wholly B.T.C.-controlled undertakings. Presumably little change would result in the existing degrees of co-ordination of rail and road services.

Five-Year Plan for Mexican Railways

THE reported success of the efforts made last year by the National Railways of Mexico to make the system self-supporting is a good start for the 1953-58 plan to put the railways on a sound financial basis while improving the plant, with emphasis on rolling stock and terminals, and giving better service. In 1953 the National Railways not only were operated without a deficit, which had been said to be impossible, but achieved modest net receipts and paid off all debts to a number of railways in the U.S.A. on account of railway equipment supplied and rolling stock hire. Besides this good progress is stated to have been made on the five-year plan, including completion of the Irapuato-Guadalajara line; acquisition of new passenger stock—much of it from Europe—and of diesel units; creation of a technical commission for the co-ordinated development of the system; and reorganisation of technical and administrative procedures. Future action planned includes increase of diesel maintenance and repair

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facilities and new branches and doubling in various parts of the country. The Government is supporting the five-year plan with the highest budgets ever approved for the railways, some $90,000,000 for this year, of which roughly $42,000,000 is for further improvements.

Overseas Railway Traffics

SOUTH African Railways & Harbours railway receipts rose from £2,399,000 for the week ended December 5 last to £2,423,000 for the following week, and fell to £1,987,000 for that ended December 26. They remained well above the corresponding 1952 figures throughout December; total railway receipts for the last complete week of December, 1952, were £1,648,000. All railway traffics in December showed increases over the preceding year, as did revenue from harbours and airways. Aggregate railway receipts for approximately nine months from April 1 to December 26, 1953, were £82,355,000, compared with £76,018,000 the previous year. Midland Railway of Western Australia traffics for November were £A.66,181, an increase of £A.12,073 over the figure for November, 1952. Aggregate receipts from July 1 to November 30 of last year were £A.284,290, an increase of £A.4,152. Victorian Railways traffics for September last at £2,884,000 compare with £2,739,000 for the preceding September. Whilst railway receipts increased from £2,728,000 to £2,874,000, those of the road motors and electric street railways fell slightly.

R.E., A.E.R. Officers' Dinner

IN the absence of Field-Marshal Sir William Slim, the Colonel Commandant, who is at present serving as Governor General of Australia, General Sir Ouvry L. Roberts, the Quartermaster General, presided at the annual dinner of officers of the Royal Engineers Army Emergency Reserve (Transportation), at the Criterion Restaurant, London, W.1, on Friday last. There were over 170 officers present and General Roberts commented that the rate of increase appeared to be about ten a year, which he thought was commendable. He thanked in particular the volunteer reserves, an absolutely vital element in the army of today. Pride could be taken in the fact that the proportion of volunteers in the R.E., A.E.R. (Tn.) was some five or six times as high as in the nearest approaching branch. Sir Vincent Tewson, Secretary of the T.U.C., in responding for the guests, emphasised the need for employers to encourage service in the R.E., A.E.R. In view of the preponderance of railwaymen serving in the R.E., A.E.R. it was strange that no Member of the British Transport Commission was present on the top table. The London Transport Executive was represented by Mr. A. B. B. Valentine and British Road Services by Major General G. N. Russell.

P.W.I. Conversazione

FOR the last two years the Permanent Way Institution has held a conversazione instead of the annual dinner at the headquarters of the British Transport Commission. These functions have proved very successful and their popularity among the members suggests that the less formal proceedings serve a more useful purpose in an essentially democratic institution than the more stereotyped dinner functions. At last Friday's conversazione Mr. M. G. R. Smith, Civil Engineer of the Western Region and P.W.I. President, received members and guests. The principal guests were Sir Brian Robertson, Chairman of the British Transport Commission and Sir John Benstead, Deputy Chairman of the British Transport Commission, both of whom spoke after the reception and the address of welcome by Mr. Smith. The proceedings also included exhibitions of films, dancing, and an entertainment by Mr. Bradley Harris. The gathering was very well attended and afforded an admirable opportunity for a number of Chief Officers and Members of the Commission to meet informally the men personally responsible for the maintenance of the permanent way, and to express to them some appreciation of the good work which is being done.

Reducing Accidents to Yard Staff

CAUSES of accidents to staff in shunting yards are analysed and means of preventing them suggested in a study published by the International Labour Organisation, one of whose technical staff has investigated the problem of accidents occurring in the coupling of wagons and other shunting work in France, Italy and Switzerland. He found that these account for about 15 per cent of all accidents to railwaymen on duty and that they occur generally at the end of a shift when the man may be tired. About three times as many such accidents are said to be caused by coupling appliances as by stumbling and slipping, and the survey recommends serious consideration of measures to improve couplers. Other safety questions on which information would be exchanged on an international basis include the clear indication of all obstacles on the track, the adequate lighting of yards, and the use of cramps on ordinary footwear to prevent slipping. The study alludes to the psychological tests conducted by some railways for men employed on dangerous work. The Inland Transport Committee of the I.L.O. this month will consider the report, which is also to be submitted to the Railway Transport Sub-Committee of the United Nations Economic Commission for Europe.

A New Bridge Design

THE Regions of British Railways are showing much enterprise in developing new techniques in the design and construction of bridges. The latest Western Region three-girder welded steel span with precast, prestressed concrete slab decking was described in our December 4 issue. Now the London Midland Region has produced what at first sight appears to be a similar type, but differs from that of the Western Region in many details, as shown in an article in this issue describing a bridge in which three of these London Midland Region spans are incorporated. Though this bridge carries only slow-moving, intensive goods traffic, site conditions made the shallowest possible construction depth essential. This is attained mainly by eliminating sleepers and ballast and fixing the rails directly to steel plates on the concrete slab deck. Special shear plate connections are used to fix the four corners of each slab to the girder stiffeners. The floor is made to run through from span to span. So exactly had the construction depth to conform to the minimum permissible dimension that even the additional thickness of a smokeplate was considered in the circumstances to be inadmissible.

Automatic Signalling on the C.P.R.

LIKE the railways of U.S.A., the Canadian Pacific early adopted automatic signals on certain sections of route, but for a long time most of its mileage was operated under the Standard Code rules, with train orders, the Canadian and American managements having wisely agreed to follow similar methods. During the last ten years the C.P.R. has been carrying out a programme of automatic signalling covering 1,000 route miles, mainly single line. A description appears in our contemporary *Railway Signaling and Communications* and shows that the management remains faithful to the searchlight type of signal, used for some years past. The first installations, however, comprised three-position electric semaphores. There are now, on the C.P.R. Eastern Division, 1,775 route miles of automatic signalling, of which only 252 are double line, and on the route covered by the latest work there are 28-32 trains daily. Over an area some 385 miles long there are no highways. On one sub-division speeds of 90 m.p.h. are reached and, fogs being prevalent, the protection afforded by good signalling had become very necessary. The time interval system had been in use with the train orders and often gave rise to considerable delay. The signals, which are so placed that C.T.C. can be added later without having to move any of them, are known already to have prevented an accident where a mistake was made in writing out an order.

What's My Line?

IN addition to helping the public to identify trains, station loudspeakers sometimes give glimpses of the normally anonymous population which participates in preparing them for their journeys. At one London terminus the usual announcements are sometimes punctuated by requests for specialists of various kinds to go to a platform where a train needs their services before departure. Some of the trades are familiar enough, such as the electrician and the carpenter, but others seem to step out of the staff statistics pages of "Facts about British Railways." Allowance must be made for mishearing the message of the loudspeakers. There may not, in fact, be such an official as an engine arranger, who appears to be summoned to arbitrate from time to time, presumably when notice has been given of a dispute existing over the claims of two trains to one locomotive. Another puzzle to the ordinary traveller, without background knowledge of the research directed to keeping the oil lamp alive and alight on British Railways, may be the lamp inspector. It is likely to be thought in a motoring community that the oil lamp is a survival of stage coach days for which responsibility could appropriately be merged with the picturesque duties of the horsebox foreman.

Ulster Transport Authority

THE fifth annual report of the Ulster Transport Authority, of which Mr. G. B. Howden is Chairman, covers the year up to September, 30, 1953. Although there was a trading deficiency for the year of £13,065, it was small compared with those of the three previous years, and results show a substantial improvement under all sections. The overall deficiency for the five years during which the Authority has functioned is £1,613,812.

On all rail services there was a loss of £265,283, or £90,835 less than in 1951-52. Gross railway earnings rose by £93,440 to £1,196,472, largely as a result of higher fares and charges, increased numbers of livestock carried, and to a small extent an increase of passenger traffic between Belfast and Bangor. Expenditure was £1,461,755, an increase of £2,605. Bus operations made a profit of £111,772 and road freight one of £86,141.

Some of the principal results for the past three years are tabulated below:—

	1951	1952	1953
	£	£	£
Railway passenger traffic ...	556,871	600,525	653,549
Rail and road freight traffic ...	1,694,482	1,899,181	2,039,685
Parcels, luggage, etc. ...	189,964	207,778	232,964
Bus services	2,863,105	3,038,513	3,148,874
Hotels and catering ...	282,741	379,497	385,034
Revenue	5,628,154	6,167,147	6,507,175
Expenditure	5,757,831	6,410,690	6,520,240
Net operating revenue	−129,677	−243,543	−13,065
Mileage, railways open	200	200	200
Route mileage, bus services ...	2,582	2,600	2,603

Acts were passed during the year by the Governments of Northern Ireland and the Republic of Ireland providing for the dissolution of the Great Northern Railway Company (Ireland) and the carrying on of its business by a new public board to be known as the Great Northern Railway Board. The Acts include several provisions of special interest to the Authority:—(*a*) compensation to the company of £4,500,000, one-half of which has been subscribed by the Ministry of Commerce in Northern Ireland, and is to be shown in the accounts of the new Board as a capital liability to the Authority, and the other half subscribed direct by the Minister for Industry & Commerce in the Republic; (*b*) the new Board to comprise ten Members, five appointed by the Minister of Commerce for Northern Ireland and five by the Minister for Industry & Commerce for the Republic, the Chairmanship and Vice-Chairmanship to alternate between the two Senior Members; (*c*) apportionment of the profits and losses of the undertaking between the two ministries, the amount apportioned to Northern Ireland to be paid to or by the U.T.A.; (*d*) at such times as the Minister may fix, such sums as the Authority may think fit to be advanced to the Board towards making good during any year any anticipated loss to be met by the Authority; and (*e*) provision for the raising of further capital by the Board, the Northern Ireland contributions to be advanced by the U.T.A.

The Board was constituted on September 1. The five Members nominated by the Minister of Commerce for Northern Ireland are also Members of the Authority; of their number, Mr. G. B. Howden was elected the first Chairman of the Board.

Passenger services were run over 152 route miles of line. Services on the Belfast-Bangor line were improved by accelerations and the introduction of more diesel sets built in the Authority's workshops. (Since the period under review, steam working has been discontinued entirely on that section and all services are diesel-operated.) Connections between rail and road passenger services were increased and there are now 3,330 each week. The policy of co-ordination of services continued. The Queen and the Duke of Edinburgh visited Northern Ireland in July, 1953, and travelled over part of the Authority's railway system.

Local passenger and freight charges generally were raised by five per cent. As from September 21 second-class accommodation on the Bangor line was discontinued. The Transport Tribunal for Northern Ireland sat in July to consider an application for the classification of merchandise and the settlement of maximum charges for, and ordinary conditions of carriage attaching to, the services and facilities provided by the U.T.A. for conveying merchandise and livestock by rail and road. Abandonment was authorised of 126 route miles of line from which all services had been withdrawn in 1950.

Refreshment rooms had a good year of trading. The hotels in Belfast and Londonderry also did good business, but those at Portrush, Larne and Newcastle had a rather poor year, mainly because of a falling-off in holiday bookings caused by the Coronation.

There was a decrease in the tonnages of cement, potatoes, petroleum and timber carried, but an increase in those of stones, coal, bacon and eggs. Merchandise tonnage was 1,904,549, a decrease of 35,631, but the figure of 1,263,445 per head of livestock was an increase of 242,809.

The financial results for the five years apportioned between trading activities and the non-trading items such as loan interest, capital redemption, and preliminary expenses, are as shown below:—

—	Trading results	Non-trading items	Total deficit
	£	£	£
1948–49 (first year) ...	52,303 profit	177,241	124,938
1949–50	213,633 loss	205,645	419,278
1950–51	129,677 loss	220,513	350,190
1951–52	243,543 loss	226,908	470,451
1952–53	13,065 loss	235,890	248,955
Five years' totals ...	547,615 loss	1,066,197	1,613,812

Although the improvement of over £220,000 in the results for the year is encouraging, the report states, there are matters which give rise to concern. Apart from the effect of trade in general on U.T.A. revenues and the loss of traffic to privately-owned vehicles, there has also to be taken into consideration the serious effect on the Authority's finances of any substantial increase in wages rates arising from applications which have been received from Trade Unions representing almost all grades of employees, and are under consideration. The economies from abandonment of some lines, and in other directions, have been substantial but whether abandonment of other sections and the working of the remainder by diesel traction would turn the loss on the railways into a profit, or even reduce the expenditure to the level of receipts, is stated to be a matter on which at present it would be unsafe to venture an opinion. The future of the railway system in Northern Ireland is being exhaustively examined by the Authority in conjunction with the Great Northern Railway Board. The problem of the economic operation of the railways has yet to be solved, notwithstanding the economies which it has been possible so far to effect.

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Two Passenger Classes on the Continent

THE decision of the Board of Management of the International Union of Railways (U.I.C.) in December last that the Governments of the countries in which its member railway administrations are situated—with a few exceptions—be asked to accept the reduction of the number of passenger classes to two, may be a momentous one in the history of Western European railways. The decision is the outcome of nearly three years' study by a committee of the U.I.C., the main points considered being the effect on receipts and adaptation of existing rolling stock. What is proposed at present is the abolition of the present first class and the adoption of two classes called "first" and "second," corresponding more or less to the existing second and third; in international traffic by day trains, without prejudice to any future arrangements which may be agreed on for night travel, the first class compartments will seat six and the second eight. The new arrangement, it is suggested, is to come into force with the summer timetable of 1956, with the exception of Italy where difficulties in converting passenger stock will postpone its adoption by two years. It is not to be adopted in Spain or Portugal.

The reduction of the number of classes in European railways to two has long been considered desirable and two classes only are provided in fact on most railways in internal journeys, being usually called "second" and "third." This has long been the case in Scandinavia and, more recently, in some countries in Central Europe. Some German high-speed diesel trains are second class only. In Spain and Portugal first and third class only are provided in many trains, though the R.E.N.F.E. Talgo and other high-speed diesels are second class only. In Italy the difficulties in adapting stock are due to the still high proportion of first class travellers over long distances. The reduction to two classes is largely, but not solely, the result of road and air competition. Given the several types of sleeping accommodation available; the availability of Pullman accommodation by day; the inclusion of meals in air journeys; and the fact that many motor coach tours are on a party basis, comparison in cost between the various means of transport is almost impossible. Simplicity is desirable both psychologically and because of the resulting economies in railway coach construction, ticket issue, and so on.

As to the nomenclature of the classes, first class in many countries has a connotation of excessive luxury and costliness; even although there is a certain limited clientele which desires the best available it is problematical how this demand may be counted on to continue, especially as much business traffic has gone to the air whilst the second class railcars in Germany and elsewhere seem to answer the need of much of the business community. On the other hand, with many tourists of limited spending power demanding the cheapest available in international railway travel, especially with increasing competition in international bus and motor coach services there is much to be said for retaining third class as the name of the less expensive type of travel offered.

Protection of Level Crossings

THE level crossing between railway and road differs from the ordinary street intersection in that two very different types of traffic are involved. On the railway traffic is under the control of trained staff, amenable to a certain discipline and usually to be trusted to act in a responsible manner, under the guidance of recognised rules. Where two railways cross on the level, as they do in a few places in the United Kingdom but very frequently in America, adequate signal and other protective arrangements can be installed to give the same safety as is afforded by like equipment when applied to stations, junctions and so on. On the road, however, the driver comes under no authority, in the sense in which the engine-man does, and great carelessness, and even wilful defiance of such precautions as are prescribed by law, are met with constantly. In this country crossings over public roads were early the subject of legislative enactments and from this came the very complete protection generally afforded by gates, closing over both road and rail, often interlocked with signals controlling the latter. The risk to road users at such locations always has been very small, and to the railway too they have presented no particular danger. Accidents have occurred, it is true, where those in charge of gates have made mistakes or been careless and allowed road traffic to cross at the wrong time, which involves also some appreciable danger to rail traffic, but compared with other risks, both on rail and road, especially the latter, those arising from crossings of this type are very small indeed.

The inconvenience arising from them is another matter. At certain places this is at times very marked, but some of the annoyance aroused is psychological, the road user feeling a subconscious hostility to another type of transport interrupting his progress. He would not feel annoyed in quite the same way if waiting for a stream of road traffic to pass, something which he, of course, experiences far more often than he does waiting for a train. Crossings are, however, an inconvenience to the rail traffic as well, and none would be more pleased to see an end of all of them than our railway authorities. The situation has to be dealt with as it is, however, and reasonable measures taken to promote the safety of all concerned. Here and elsewhere crossings over public roads are being eliminated gradually, if the work is not proceeding with the rapidity that could be desired. In recent years, for example, on the Continent, major works have been undertaken to get rid of the series of crossings in certain towns, allowed to spring up in the first days of railways.

As far as Great Britain is concerned it is the occupation crossing which raises the greatest anxiety today. This, with the accommodation type, came into existence as the railway cut through properties or across means of access to them. Responsibility for the safety of their users rests on these persons and there is nothing to prevent carelessness or forgetfulness leading to grave results. At one time collision with road vehicles did not involve very much risk to a train, but the advent of motor traction changed the picture and today very considerable danger may arise if a heavy motor lorry or tractor stops on the line. Some serious accidents have indeed occurred and we are fortunate in not having had more. The fatal collision at the Hilgay crossing on June 1, 1939, attributed to gross carelessness of a lorry driver, led Sir Alan Mount, then Chief Inspecting Officer of Railways, to append to his report a comprehensive review of the question of the non-public crossing, which brought out clearly the legal intricacies involved and great difficulty of arriving at a satisfactory solution. This crossing was one of those, of which there are many, which had virtually become a public one. Vehicles were said to cross "every five minutes" in the beet season. Sir Alan Mount thought that if action were taken to ensure greater safety, legislation might be necessary and pointed out that a predecessor, the late Sir Arthur Yorke, had thought the same as long before as 1910, while the present Chief Inspecting Officer, Lt.-Colonel G. R. S. Wilson, in his annual report for 1952, noticed recently in these columns, mentioned that the whole problem was still under examination, following the memorandum submitted to his Ministry by the British Transport Commission in 1950, and added "but it is already clear that its solution will present formidable obstacles," which we can well believe.

The essential practical and technical points of the crossing question were put before the Institution of Railway Signal Engineers on January 12 by Mr. J. P. Loosemore, in a paper giving a comparison between the methods used for both public and non-public crossings in the United Kingdom and many other countries, with descriptions of much of the equipment used. From that he sought to arrive at some proposals for improving the standard of safety in this country. He showed how greatly practice varied in the areas dealt with. In America, for instance, crossings are extremely common and much use is made of flashing light warnings and barriers with automatic

operation. Flashing lights find favour too in several Continental countries. A disadvantage of such arrangements is that if a failure occurs the warning is, of course, exhibited, in accordance with correct signalling principles, and if the condition continues road users have to begin to proceed against it. If such troubles become at all frequent a contempt for the warning is likely to grow up. For this reason the Netherlands and one or two other countries have provided a special " out of order " indication, which appears on failure of the main controls, although generally such a course is not considered necessary. It was interesting to read in the paper that in some cases legislation has been, or will be, enacted, imposing quite heavy fines on those who defy regulations and fail to act at the crossings as prescribed by law.

Mr. Loosemore emphasised that there was no possibility of getting rid of all crossings and " protective devices must therefore suffice." Barriers instead of gates, provided they could be legalised, offered the chance of effecting economies, as seen at Warthill in the North Eastern Region, and at non-gated crossings over light railways warning light signals should be effective. He rightly observed too that the occupation crossing was the greatest menace and offered the greatest difficulties, but a trial of automatic barriers and/or flashing lights might help to improve things and point the way to general betterment. To do this, however, the legal aspect of the matter would have to be investigated. Considerable expense would be entailed and it " would be unreasonable to expect the railway to bear the cost . . . " The changed nature of vehicular traffic over these crossings has created a position not contemplated when they were called into service.

In the discussion, Colonel D. McMullen, Inspecting Officer of Railways, to whom fell the duty of passing the Warthill barrier installation, stressed the very high degree of safety ruling at public gated crossings and the natural reluctance to doing anything that might lower our standards. Public opinion would not agree to that; the tendency is to endeavour to improve things where risks are greater.

It was satisfactory to hear representatives of motoring associations speak of the railway safety record as enviable and the position at crossings as contrasting so strongly with general highway risks. At one time the public level crossing was made a bogey of by some sections of the motoring world—not by responsible officials, who knew the facts—who were fond of calling them "death traps," which is precisely what they were not. Those who call for large sums to be spent on providing warning devices at the occupation type crossings may be asked where the money is to come from, and in addition must remember that such equipment will have to be maintained in thorough order, or it might prove worse than useless, something which also cannot be done for nothing.

U.S.A. Railway Recession

THE year 1953 was a chequered one for the U.S.A. railways. After a poor beginning, they strengthened their financial position until the end of August. Freight revenue for the first eight months of the year rose by $406,761,000 (7·2 per cent), eclipsing a decrease of $43,675,000 in passenger revenue (7 per cent) and small losses in mail and express receipts. Operating expenses were up $115,371,000 (2·2 per cent), but the operating ratio was 75·4 per cent against 77·8 and net railway operating income, or earnings before charges, was $131,846,000 higher, a rise of 21·5 per cent. In September and October the upward trend of freight revenue reversed so decisively that the increase for 10 months shrank to $330,014,770 (4·5 per cent), while the decrease in passenger revenue became $51,425,580 (6·8 per cent) and the loss of mail receipts amounted to $6,032,800 (2·4 per cent). On October 31 the betterment in net railway operating income was only $95,815,000, or 11·2 per cent above the 1952 level.

The November statement of revenues and expenses will not reach London until the middle of February, but the Association of American Railroads' monthly bulletins on the transport situation show that the upward surge in the volume of traffic spent itself towards the end of last year. For 50 weeks to December 12 wagon loadings were 429,280 ahead of 1952 (1·2 per cent), but for the five weeks from November 7 to December 12 loadings were 387,870 fewer (10·3 per cent). For the 50 weeks coal loadings were 4·9 per cent lower, but for the five weeks the rate of decrease was over 16 per cent. Coke forwardings increased in the 50 weeks by 4·6 per cent, whereas a decline in the five weeks of nearly 23 per cent, representing 17,000 wagons, proved that blast furnaces and steel works had ceased to produce at full capacity. During these five weeks to December 12, the number of wagons loaded with general merchandise such as manufactured goods, decreased by 101,860, or 5·4 per cent, and, as a last pointer to a decline in general business activity, the number of wagons of export freight (excluding coal and coke) unloaded at U.S.A. ports in the month of November was 16,500 less than in November 1952, a difference of 20 per cent.

In a perplexing year the U.S.A. railways performed one remarkable feat. During the months of open water on the Great Lakes, from April to November, a record quantity of 95,844,450 tons of iron ore was transported by all rail-lake-rail routes from the North West ranges to iron and steel works in the States. The Great Northern Railway alone hauled about 2,500 wagons daily from the Mesabi range to Lake Superior, a distance of some 100 miles. For ore traffic, the railways use wagons varying in capacity from 60 to 90 tons, so that less than 5,000 of their vehicles would hold the whole of the ore passing over British Railways in a week. Up to December 12 they moved no less than 3,113,140 wagons of ore from all sources of supply, 497,620 more than in 1952 (19 per cent) and 136,000 more than in the busy year 1951 (4·6 per cent).

The U.S.A. railways are skilful in adjusting traffic facilities to cope with expanding tonnages and quick to cut down expenses when business contracts. At the end of October the railway system was operating at a ratio of 75·2 per cent against 76·5 in 1952. The Santa Fe, with a comparatively sparse traffic in the Western District, operated at 69·5 per cent against 70·2, while the Pennsylvania, with a much larger and denser traffic in the Eastern District, reduced its ratio from 84·2 to 81·9 per cent. The extended use of diesel motive power is probably the quickest means of reducing working costs at the present time. During the 12 months to November 30, the railways put into service 17 new steam locomotives and 2,237 diesel units; in the same period they withdrew from service 4,387 steam locomotives, 50 electric units and 40 diesel units. On December 1 the total number of locomotives available for traffic was 27,622. This serviceable stock consisted of 11,024 steam locomotives, 591 complete electric engines and 16,007 complete diesels as operated. The diesels formed 58 per cent of the available stock in number and their average tractive effort as operated was about 40 per cent greater than that of the steam locomotives and about 25 per cent above the complete electric locomotive's effort. The under-repair ratio for the diesel was just over one per cent, compared with nearly 10 per cent for the steam locomotive and 4·6 per cent for the electric engine. We are not surprised that on December 1 the railways had on order one steam locomotive, 10 electric, and 649 diesel units.

Great as has been the improvement in operating efficiency of recent years, it is a healthy sign that the U.S.A. railways are not content with the existing standard of performance. They regard " net ton miles per serviceable wagon per day " as a trustworthy gauge of the work done by their rolling stock. In September and October this statistic fell below the level for the three previous years. The Pennsylvania, as the largest wagon owner, is concerned at the slow transits of much of its traffic and has launched a campaign to curtail the hours spent by wagons in yards and sidings. Other companies aim at shortening the turn-round time of wagons by extending centralised traffic control and mechanising their principal marshalling yards. In 1953 the railways increased their stock of wagons by 21,000 to 1,858,900 and kept the repairs percentage down to 5·3 in December. They are thus well equipped to deal with any increase in traffic which a trade revival in 1954 may bring.

XUM

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Improving Railway Statistics

January 25

SIR,—In your August 28 issue an article showed how U.S.A. railway statistics excelled our own figures in scope and vigour. Here is another example of the Association of American Railroads' enterprise in circulating up-to-date information. On December 28 its Bureau of Railway Economics issued the first of a series of quarterly reports on a new index of average unit prices of railway materials, including fuel. The base period, equalling 100, is the mid-year average of 19—1949 which is used by the U.S. Bureau of Labour Statistics in compiling wholesale and retail price indexes. Between July, 1950, and October, 1953, the index for materials rose from 109 to 131, the index for fuel from 104 to 111 and the index for materials and fuel together from 107 to the record height of 123.

This spot price index, as of the purchase date, is next converted into an annual charge-out price index, corresponding in point of time to the consumption of materials and fuel, and is then combined with an index of wage rates. From 1939 to 1953 charge-out prices rose 134 per cent and wage rates 154 per cent; the composite price and wage index increased 148 per cent. In the after-war years, 1945 to 1953, charge-out prices were 76 per cent higher, wage rates 101 per cent and the two combined 94 per cent.

With customary generosity, the A.A.R. will supply anyone who is interested with further details on request.

Yours faithfully,

YOUR CORRESPONDENT

Westminster, S.W.1

Station Name Signs

January 30

SIR,—It seems that Mr. Thomas Haywood's strong criticism of railway station signs in your January 29 issue is partly due to insufficient consideration of this old problem.

To standardise a station sign as Mr. Haywood suggests is a comparatively easy matter, apart from displeasing the partisans of the standards not chosen. The real problem is the positioning of the signs. The same thing applies to railway signals, which are standardised but which cause many a headache to those who have to place them where they can best be seen by drivers.

Mr. Haywood remarks that passengers should see station name signs at eye level while sitting in the train. This sounds reasonable enough, but signs placed at this level are repeatedly obscured by station barrows with loads of parcels and luggage, as well as by passengers waiting for trains.

This is just one of the many difficulties affecting station name signs. Another is the fact that such signs have to be legible by night as well as day, and they often throw heavy shadows when placed near station lights. Very important, too, is the cleaning of signs, which, if placed high, give trouble to the cleaning staff.

Conditions on the Underground stations of London Transport are more easy than on stations in the open, as there are always walls for the full length of the platforms on which signs can be placed. No parcel trolleys and no trouble with infrequent lights or weather difficulties are experienced, while the background is always similar.

Second to positioning of station signs is the artificial background of the signs themselves; and this can be standardised. As proof of the importance of this artificial background is the fact that small letters on a large artificial background are more prominent than larger letters on a small background.

Mr. Haywood supports this; but when he states that the name should not be white, he is in a small minority, for when extensive large scale tests were made in 1935, or thereabouts, by far the majority of passengers and staff of many grades who were questioned were in favour of white letters on a dark artificial background. Even Mr. Haywood himself found it necessary to frame his circular white background in black.

One day, perhaps, we may see most of the station name signs done away with, and the names of the stations broadcast throughout the train by a recorded voice set in motion by the guard pressing the appropriate button just as the train is running into the station.

Yours faithfully,

C. GRASEMANN

52, Hurlingham Court, London, S.W.6

Rotary Snow Ploughs

January 22

SIR,—I see that rotary ploughs, for highway use, are now being manufactured, under licence, in this country and I am wondering if it will remind British Railways that they too should bring themselves up to date in a similar manner?

So far this winter and for the past two or three winters we have been fortunate in the matter of snow, but the time will come when the railways will once more find themselves in a sorry mess like they were in 1940-41-42 and 1947 when blockages and delays cost them, and the country, a considerable amount of money.

Rotary ploughs for railway use are expensive, but if British Railways were to employ only ten of them, located at the known bad spots, their cost would be covered many times over in one severe winter's operation.

Yours faithfully,

G. RICHARD PARKES

Montcroft, School Lane, Formby, Liverpool

Branch Line Closing

January 3

SIR,—To judge by letters from correspondents in your journal against the closing down of railway facilities, it is evident that your explanation in your January 1 issue that "each line is considered on its merits," and so on, will not be accepted by them.

There is no reason why branch lines cannot be developed with cheap charges, more train halts to suit public requirements, re-opening of lines at holiday periods to relieve congestion on the roads, as of the Caernarvon-Llanberis branch, or by joining up with other lines, as for instance the Watford-St. Albans branch with the St. Pancras main line by the old Midland spur, so as to give increased cross-country facilities for both passenger and freight in industrial areas.

One of the results expected from nationalisation was to free the roads of heavy consignments and put these back on the railway where they rightfully belong, so as to increase safety on the roads. This, however, was not done by the British Transport Commission under the chairmanship of Lord Hurcomb; on the contrary, by favouring road transport, more vehicles were thrown on to the roads, with added danger to life and limb. There does not appear to have been any change in this policy.

Those who believe that expanded rail transport is beneficial to the economy of the country should elect representatives to Parliament to seek new leadership in transport, initiate private enterprise as occasion demands, and more safety on the roads—(there were 447 killed and 17,601 injured in November)—by cheaper and heavier traffic on the rails. Let us get cracking.

Yours faithfully,

ROBERT W. LEWIS

"Beth-el," 104, Leggatts Way, Watford

THE SCRAP HEAP

Transferable

I am now 83. When young I lived a great deal with my great-aunt, who bought her first-class return railway tickets from Dumbarton to Glasgow in packets of 50 or 100 with her name printed on each. She frequently sent a ticket to poorer friends to enable them to visit her. I used up some packets of these tickets and I remember how come down in the world I felt the first time I had to lengthen the queue at the ticket office.—*From a letter to "The Times."*

Brighter Advertising

(*The following suggestion for adding human appeal to technical press advertising, which was too long to use in its entirety, has been sent us by a correspondent.*)

Are *your* engines run-down, listless, a tiresome Nock on the footplate? Do they suffer from hot flushes, after-firing pains, and hiccoughs when taking water on the troughs? Then they need Lo-Co-Go, the Little Liverpool Street Pills, containing the wonderful new drug discovery—Drawbarpull, the tonic that puts the bust in combustion and makes every signal lamp look green.

Listen to this solicited testimonial from a satisfied user: "I was just an ordinary 2-6-0 of the 'Crab' class, attached, when they'd have me, to Shed NBG 2 (look *that* one up, spotters) and such was my condition that my shedmates referred to me as the Old Crab, or, worse still, the Unattractive Effort. Relegated to dreary mixed-traffic jobs from desolate yards at unearthly hours, with never a decent night's rest in weeks, my performances got worse, and I finished up, tender first, dragging empties into Euston. Signals gave me that distant look as I approached, and my crowning humiliation came when I failed to draw away from the home starter one Saturday afternoon, and completely missed the points.

"Then, one morning, a kindly driver who had volunteered to take me out, slipped a Lo-Co-Go down my chimney. What blessed relief—at last my choked tubes could *breathe*, and now I feel I can tackle anything, up to 250 tons, this is. No more breathless breastings of Tring, and the wheezing waits at Weedon—almost any day you can see me whipping through Willesden, heyding-a-ding and I'm *over* Tring, while at Welton, I've really got a belt on. Do I come to a *dead* stand at Rugby? Not on your life—I'm *alive*, and can hardly wait for my next turn.

"Yes, you too can conquer Ais Gill, if you're ever on that road (which, glory be, I'm not)."

So brook no delay,
Get Lo-Co-Go today.
Give your engines new life
The Permanent way.

They Have Closed Our Station

They, impersonal and uncomprehending, yet no doubt sitting genially enough around some boardroom table, have struck us off their list of passenger stations. They, tardy with their logic, have argued that we, having an efficient bus service, do not need to be served by their railway line. They, with nonchalant strokes of pens and pencils, have obliterated a part of our village life and have severed us from our friends.

We have no longer any claim to the navy-and-gold stationmaster whom we shared with the junction station, the next along the line, and who, always with flower in buttonhole, came on the morning train every weekday to inspect the administration of our toy station with all the ceremony of a matron visiting a hospital ward. . . .

Our porters were friendly, helpful, and kind. We have known them arrange for a train to shunt back so that the glasses of a tearful little girl, which had fallen between line and platform, could be picked up and given to her. . . . In past years they tended the banks that sloped up from the two platforms, transforming them from grassy valances into a spring enchantment which changed later to a summer-time blaze of glory that in turn died away into the purples and yellows of autumn. There are still certificates hanging awry on the mouldering walls of the bleak waiting-room to show that our station has won prizes for its trimness, orderliness, and the beauty of its gardens.—*Kathleen Holker in "The Manchester Guardian."*

Free Show

British Railways, as far as we know, offer no annual prizes for the worst looking railway station in the Scottish Region. If they did there is no doubt that Queen Street, Glasgow, could count on many votes from travellers. There is an almost noble lack of distinction about this terminal which stands in the same relation to the handsome stations of the world as McGonagall does to the great poets. . . .

But Queen Street Upper sparkles like a ruby compared with Queen Street Lower. We renewed our acquaintanceship with the basement department of Queen Street the other day and noticed that the years had not mellowed this travel dungeon. . . . British Railways, we are certain, have employed the best architects and the finest designers to preserve this station as a kind of museum piece. . . .

In a proper station there is nearly always something interesting happening. To go to a station like Inverness, or York, or Kyle of Lochalsh, or Georgemas Junction is often better than going to the cinema or the theatre. And the whole non-stop entertainment is free—except for an occasional platform charge.—*From "The Scotsman."*

The Engine Spotter's Lament

Amidst the station crowd he stood,
His name—Nathaniel Cotter,
With pencil, book, in pensive mood,
An ardent engine spotter.

He visualised the "Royal Scot"
Come thundering through the mist,
And grasped his pencil, soon to jot
The number on his list.

But when a train came round the bend,
As furtive as a weasel,
Nathaniel growled "I comprehend;
Aw jings, its just a diesel."

Nathaniel does not soil his book,
(A wise and goodly plan)
To place on record types which look
So like a luggage van.

J. B.

Veteran Colliery Locomotive

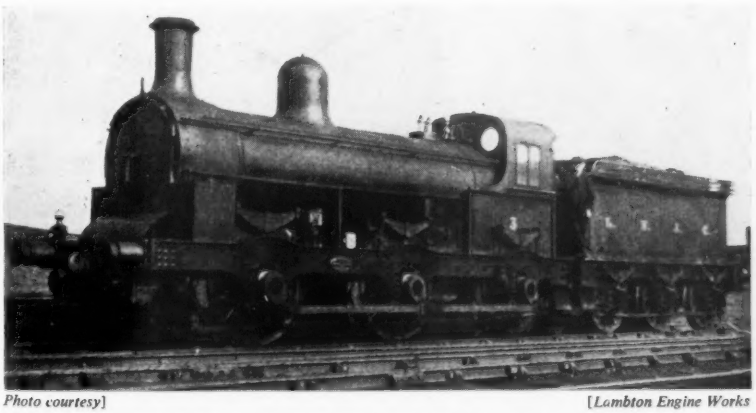


Photo courtesy] [Lambton Engine Works

Beyer Peacock 0-6-0 locomotive built in 1865 which had spent all its working life hauling coal from the Lambton Collieries to Sunderland Staithes, until withdrawn for scrapping last month

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

Record Wagon-Miles Total

In October last the Central Railway worked a record number of goods wagon miles, 48,930,000, beating the previous record of 48,537,000 set up in January, 1953.

Amenities at Stations

Train indicators with blue lettering on a white background have been installed at Bombay Victoria, Dadar, Kurla, Thana and Kalyan stations on the Central Railway. At the Bombay end of Dadar Station a large new office has been constructed to handle all inward parcels, which formerly encumbered one of the platforms.

NIGERIA

New Lagos Terminus Opened

On January 11, the first section of the new Lagos terminus was brought into use. The occasion was marked by a ceremony at which Sir John Macpherson, the Governor, and Abubakar Tafawa Balewa, Minister of Transport, each laid a foundation stone.

The first train to leave was the noon Limited, drawn by a "River" class locomotive, whose nameplate, *River Maijuju*, was unveiled by the Minister immediately before its departure.

Colonel R. B. Emerson, General Manager, said that the terminus replaces a building erected in 1910 at a cost of under £400. When finished, in about a year, it will have cost nearly £400,000. Any comparison must, however, take into consideration the difference in the purchasing power of money, and it is probably more accurate to describe the station as providing facilities four times as great as those of the old. In 1953, over 176,000 passengers purchased tickets at the old station.

The new terminus will have five passenger platforms and cover four times the area of the present station. Approaches and all platforms will be covered. The covered concourse will have an overall width of 125 ft. There will be a post office and special mail sorting rooms.

The main arrival and departure platforms are over 1,000 ft. in length; a run-round road is provided between each pair of platform lines. Between each pair of main platforms a short baggage platform enables loading and unloading of baggage to take place without interfering with the free circulation of passengers. The structure is in reinforced concrete.

UNITED STATES

High-Capacity Ore Wagons

A new type of bogie hopper wagon, designed primarily to convey Venezuelan iron ore from the Gulf port of Mobile to the iron and steel works of Birmingham, Alabama, has been designed to carry a load of 95 tons (84½ long tons). The wagons are 36 ft. long over cuplers, 29 ft. 8 in. long inside, 9 ft. 8 in. wide inside, and 10 ft. 8 in. from rail level to the top of the side sheets; the distance between bogie centres is 26 ft. The tare weight is 27½ tons, or almost exactly one-quarter of the total loaded weight of 112 long tons.

The side sheets are of ¼ in. steel plate, and the hopper sheets, longitudinal hoods, and other parts which sustain the greatest wear, of ⅜ in steel plate. Welded construction is used throughout, without rivet heads or open seams inside the wagon to obstruct the free movement of the ore. The wagons are designed to be discharged normally by dumpers which invert them bodily, but they can be discharged also through under-doors when ore is being stock-piled.

As a start, 1,000 of these wagons have been ordered, 300 by the Gulf, Mobile & Ohio, 250 each by the Louisville & Nashville and Southern, and 200 by the St. Louis-San Francisco. It is likely that the design may be adopted by other railways carrying ore in bulk.

IRAQ

Nasiriyah-Kut Survey

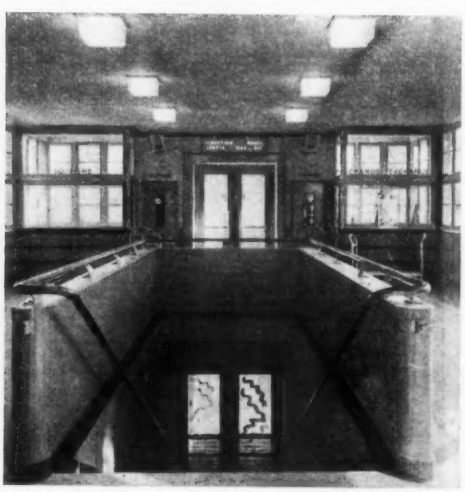
The State Railway Board has decided to survey the proposed new line from Nasiriyah to Kut. The survey will be carried out by a British firm of consulting engineers. The new line will be approximately 115 miles long and is expected to be completed within two years.

SPAIN

Canfranc Route to France

The long-standing problem of the through connection with France via Canfranc has been discussed between

New Gare Maritime at Dieppe



(Left) General view of new Gare-Maritime at Dieppe, showing stairway to Customs hall and other premises used mainly by passengers to local destinations. (Right) Interior stairway with inquiry and money changing offices situated on the left and right respectively

delegates of the French National Railways and Spanish delegates headed by the Spanish Minister of Public Works and the mayor of Valencia. The best connection between Valencia and Paris, via Saragossa, Canfranc, Pau, Dax, Bordeaux and Tours takes about 26 hours. The alternative route via Barcelona takes about half as long again.

As a first step to improve the connection via Canfranc the present fast railcar services between Valencia and Saragossa (217 miles) are to be extended to Canfranc, 107½ miles farther, before March. The electrification of the Valencia-Teruel and Canfranc-Ayerbe sections, both now nearing completion, will contribute to the improvement of Valencia-Canfranc services.

FRANCE

Repair of Wagon Floor Boards

The S.N.C.F. has frequently found that when wagons go into workshops to have floor boards replaced it is only the two ends of the boards which are damaged. At the Saintes Workshops a system has been evolved for fitting new end sections to the good section of the floor board. First, any protruding bolts are cut off, after which sections are cut off each end of the floor board on an adjustable double bladed cutting machine; the lengths of the portions cut away are arranged so that the final join will come over the wagon body supports. A two-spindle horizontal drilling machine is then used to drill two 12 mm. (15/32 in.) holes in both ends of the board section and in the new end pieces; these are then joined to the board by means of round 15/32 in. gudgeon pins.

Colour-Lights, Lyons-Marseilles Line

On the Chasse to Saint-Rambert-d'Albon sction of the Lyons-Marseilles main line, the S.N.C.F. has installed automatic block colour-light signalling worked by 50-cycle a.c. current. The object has been to increase track capacity and change the signalling system in preparation for the later electrification of the Lyons-Marseilles line.

The new installation has permitted the substitution of one mechanically-operated signalbox with 40 levers at Vienne for the two boxes formerly there; Vienne is approximately midway between Chasse and Saint Rambert-d'Albon, 22 miles.

NORWAY

Sorland Railway Services

From June 10, the second portion of the day train from Oslo to Stavanger, which formerly terminated at Nelag, will run on to Kristiansand. It will leave Oslo at 10 a.m. and will have a connection from Kristiansand to Stavanger. The corresponding train from Stavanger will continue to start at 8.50 a.m. and will reach Oslo at 7.43 p.m., instead of 9 p.m.

IRELAND

Branch Line Closing

C.I.E. has applied to the Transport Tribunal to withdraw all services on the 9-mile Banteer-Newmarket branch. The branch was closed to passenger traffic in 1944 but re-opened between December, 1945, and January, 1947. Since then it has been used for livestock trains only.

All the branch lines for which C.I.E. has made application to the Transport Tribunal for closing orders have been closed to traffic for some years, except for occasional livestock or goods specials. Permission is sought to close them for economic reasons. Before the Tribunal makes an order a public hearing is held to allow interested parties to state their views.

Since April, 1953, seven orders have been made in respect of the following branches: Woodenbridge-Shillelagh; Tralee-Dingle; Birdhill-Killaloe; Cork-Macroom; Fermoy - Mitchelstown; Goold's Cross-Cashel; and Schull-Skibbereen.

D.N.G.R. Line Purchase Urged

Louth County Council has asked the Republic of Ireland Minister for Industry & Commerce to urge the Government to purchase the Dundalk, Newry and Greenore line instead of having it sold to a private company for scrap.

Dublin-Limerick Diesel Trains

On February 1, C.I.E. introduced fast diesel trains between Dublin and Limerick. The new service through Nenagh cuts the present timing for the journey to Limerick by half an hour. The train leaving Dublin at 10 a.m. reaches Limerick at 1 p.m. instead of 1.30; the return trip takes 3 hr. 5 min. C.I.E. now operates diesel trains on all its main lines.

Publications Received

Table of Natural Logarithms for Arguments between Zero and Five to Sixteen Decimal Places. National Bureau of Standards Applied Mathematics Series 31 (revision of MT10). 501 pages. Obtainable from Government Printing Office, Washington 25, D.C., U.S.A. Price $3·25.—This table is made available to meet a continuing demand for 16 place tables of logarithms of numbers from ·0001 to 5 at intervals of ·0001; it is a re-issue of Volume III of a four-volume table of logarithms published in 1941. As four-figure arguments are often sufficient in practice, the practical computer in engineering should find the table labour saving in view of the fine interval. Whenever the logarithm of a number given to more than four places is needed, linear interpolation is usually satisfactory because it gives approximately nine decimal place accuracy over the range of the table.

Battery Chargers and Charging. By Robt. A. Harvey. London: Iliffe & Sons Limited, Dorset House, Stamford Street, S.E.1. 8¼ in. × 5¾ in. 400 pp. Illustrated. Price 35s. Secondary cells are so widely used in industry and transport today that a knowledge of their characteristics is of increasing importance. Most electrical text books are compelled to treat the subject of batteries and chargers somewhat briefly, and many users of such equipment will welcome a volume specialising in this form of power supply. The chapters deal mostly with different applications of batteries, tracing their evolution and describing the types of charger and charging circuits appropriate to each. Several railway carriage lighting systems are described in this way in the chapter on railway applications, which also covers battery power supplies in electric and diesel-electric traction, and in signalling. Adoption of electric trucks and vehicles on an increasing scale at goods and passenger stations has familiarised greater numbers of railway staff with the use and maintenance of batteries, and has made electrical knowledge an asset in many supervisory posts for which it was not formerly needed. This book provides the technical groundwork which is essential for judicious selection and efficient use of such equipment.

The Witton Works of the G.E.C.—Electrical generation, supply, and applications in industry and transport are illustrated in this brochure of the General Electric Co. Ltd., showing typical machines and switchgear manufactured at its Witton engineering works. The company's traction activities are represented by views of multiple-unit electric stock in Portugal, electric and diesel-electric locomotives supplied to South Africa and Ceylon, and trolleybuses in Northern Ireland and Tasmania. Many scenes in steelworks and manufacturing plant where G.E.C. motors, alternators, and heavy-duty distribution equipment have been installed emphasise the part which is played by electric power in the industries on which transport depends for its essential materials.

Sands Across the Sea. The Southern Region has brought out a new edition of "Sands Across the Sea," its guide to Brittany, Normandy, and Picardy. The 262 pages are packed with useful and interesting information, and there are numerous half-tones, many maps and sketches, and a gay and inviting cover. The opening chapter describes the cross-Channel routes and vessels, and is followed by notes on each province, preceding descriptions of the individual seaside resorts and places of interest. For all who are considering a holiday in northern or north-western France, whether strange to or familiar with, the country, this is an indispensable book and excellent value for 1s.

XUM

Sixteenth International Railway Congress

Track Maintenance Problems

Organisation of gangs, planning, mechanisation, and economic aspects

ON Question No. 1 on the agenda of the International Railway Congress in London next May, of 57 railway administrations on the Continent of Europe and in their dependencies, and on the shores of the Mediterranean, which were asked for their replies, 26 eventually answered. These replies were summarised and reported on by Monsieur C. Feyrabend, Ingénieur en Chef, Chef de la Division de l'Entretien au Service de la Voie et des Bâtiments, South Eastern Region, French National Railways. The replies of railways in English-speaking countries were discussed in an article in our January 22 issue.

After a review of the guiding principles upon which the question is based, M. Feyrabend draws attention to the differences in magnitude and in geographical, economic and other characteristics between the undertakings concerned. This is borne out by tables covering four pages of the report, and showing such statistics as lengths of track, gross annual *tonne*-km., and sleepers used on main and subsidiary lines.

As influencing the general patrolling and inspection of their lengths by normal maintenance gangs, a number of their subsidiary duties are discussed. These generally include reliefs for the manning of level crossings, and in some cases the servicing of signalling equipment, the relief of bridge and station staffs, and on one railway the manning of points in the absence of operating staff. However, the general opinion is that these obligations do not appreciably affect the geographical organisation of the gangs, but there is no doubt that the normal small length-gang housed largely at level-crossings and stations, does lend itself to insuring that reliefs are available on the spot, a condition not fulfilled by large mobile or/and mechanised gangs. This consideration weighs heavily with some railways, notably Italian and Swiss, who consider the small length-gang essential, though the need for keeping a close watch on dangerous sections of line in mountainous country is probably a stronger argument in favour of this form of organisation. Long gang-lengths are also considered unsuitable on mountain lines because of the necessity for removing snow and ice at short notice, problems not yet solved with longer gang-lengths.

Organisation Considerations

Another point of agreement seems to be that the density of the installation to be maintained, mechanisation and maintenance work, and the grouping of labour in villages in sparsely-populated areas are of greater importance in deciding the form of organisation required, rather than the volume of traffic on the section concerned or the maintenance of a mountain line. Housing facilities are not an important factor on many lines, but when railways in Belgium and in North Africa are being considered together generalisation is almost impossible.

All the railways consulted are studying possible modifications in the traditional maintenance organisation, but investigations are still in the experimental stage, and there are no indications what the final pattern will be.

Exceptions are the Algerian and Tunisian systems, which appear to have broken with tradition entirely, and also the Franco-Ethiopian, still wedded to traditional maintenance by circumstances. The experiments of the other railways can be grouped into two categories: (*a*) Concentration of smaller into large gangs, and the various methods of transport for their mobility, and (*b*) mechanisation. For instance, the French National Railways, while retaining the local length-gangs for normal patrol and routine duties, are moving large mechanised gangs about as required on some 4,400 km. of line in special trains. On the Netherlands Railways there is one mechanised gang housed in a coach, which operates throughout the system. The North African administrations have been using large mobile gangs for the past 15 or 20 years, and usually the whole system is covered; the Tunisian Railways are now trying mechanisation additionally. Belgian colonial railways also have large mobile gangs maintaining lengths of about 50 km.

Recording Equipment

Various types of vehicles and instruments are used by different railways for indicating and recording irregularities in the track in order to determine their maintenance programmes. The Mauzin coach, used by the French, Belgian and Luxembourg railways, makes full-scale records, and, as it functions independently of the speed of the coach, the latter can be attached to the fastest trains. The Amsler coach, used by the Swiss Federal Railways, records at speeds up to 37 m.p.h. only. Eight of the railways replying have Hallade recorders, and three make recordings with four types of light instruments. The Italian railways have two: (*a*) The Iezzi, fitted to a light push-trolley, and (*b*) the Pollak, which shows directly and records irregularities and variations in gauge. Some French West African railways are experimenting with a Matisa trolley giving direct readings and recordings of level, gauge, and curvature. The French National Railways have designed a light machine to be hauled by a trolley; it records and indicates directly and full-scale irregularities, superelevation, levels, and gauge.

Speed Restrictions and Signals

Alone among the big Continental railways, the Swiss Federal administration imposes a speed restriction of 46 m.p.h. when maintenance work such as shovel packing is in hand; this is because there is so much curvature and 70 per cent of the track is laid on metal sleepers. The French railways do not consider any restriction necessary for ordinary maintenance, but of the 11 administrations replying to the question on this subject, 5 use temporary portable signals for protecting mechanised maintenance operations, and on another 5 both temporary and station signals are used for this purpose. The eleventh system, the French National, protects its large gangs by: (a) temporary mobile signals at a distance of 1,300 yd. from the work site, and (*b*) by a telephonic warning from a distance of from 4 to 8 miles, to allow machines to be removed from the track in good time.

Mechanised Maintenance

An appendix to the report shows the 36 kinds of mechanical tools used by the different railways, and a number of diagrams are included to explain in detail the functioning of mechanised gangs. The French National administration considers that mechanisation has a well-defined field of application, including lines that have reached a degree of wear involving considerable work, but it also issues a warning that, by reducing physical effort, it may encourage men to undertake non-essential or even useless work; the work programme must, therefore, be precisely defined. Moreover, all things considered, mechanisation, though making possible a great increase in individual output, secures only a limited saving as a whole, as this decreases rapidly when the amount of work to be done is small, especially where the volume of traffic is considerable.

Apart from the Swiss and Italian railways, the larger Continental systems usually provide pathways beside the track to facilitate the movements of men and materials, but they are normally only about 3 ft. wide, and suitable for bicycles but not for big machines; portable generatings sets can use them in a few instances. On overseas lines, such paths are unnecessary. A series of tables, covering eight pages of the

report, gives details of the width and capacity of the pathways, arrangements where bridges intervene, the size and weight of the machines they can carry, and the advantages claimed for them, railway by railway. The chief advantage claimed for such pathways is that where they are in service, cycles are used by labour, and travelling time is paid at the rate of 5 min. per km.; where there are no pathways the rate is 15 min. per km. for men getting to and from work.

Economic and Financial Aspects

Asked to compare the costs over a fairly long period of gangs using (*a*) hand labour, and (*b*) mechanical appliances for similar work, and also the proportions attributable to labour, materials, equipment and consumable stores, four administrations only replied. The French National Railways point out that the advantage of greater productivity of a large mechanised gang—a saving of 56 per cent in labour costs as compared with manual labour—is largely swallowed up by travelling expenses payable to the men and the cost of their living train (or other transport and accommodation); the final saving is, therefore, not more than 10 per cent.

With the small mechanised gangs there are additional costs of (*a*) permanent look-out protection for about 75 per cent of the working time, and (*b*) more costly methods of working.

Medium-Sized Gangs

On the other hand, the amalgamation of two or three neighbouring small gangs to form a medium-size gang 15 or 20 men strong, saves the high cost of travelling expenses, transport and accommodation, as the men return home daily. The only extra cost is for look-out protection, which is no greater than with a small gang; also this size of gang can be organised to avoid the more costly working of the small gang. The medium-size gang is thus considered most economical and effective.

Furthermore, the cost of the lookout organisation on the French system is estimated as follows: for large mechanised gangs, 15 to 20 per cent of the total labour cost; for small mechanised gangs 20 to 22 per cent; for medium mechanised gangs, 10 per cent; and for manual gangs 4 per cent. The Italian Railways put the figures at 5·5 per cent for manual labour and 12 per cent for mechanised work, these percentages also being of the total labour figure.

Considerable percentages of the labour costs are due to unproductive time (*a*) spent in waiting for trains to pass, and (*b*) in moving equipment and similar jobs. Percentages given, again by the French National administration, are:—

Large Mechanised Gangs.		Small and Medium Mechanised Gangs.		Manual Labour Gangs.	
(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)
15	7	5	5	2	1

The additional cost involved when men are working in large gangs away from their headquarters, including time lost in travelling, cost of transport, and travelling allowances, is estimated at 55 to 65 per cent above the standard wage rates in force.

In conclusion, the report points out that the replies therein summarised envisage the normal or traditional types of permanent way hitherto and at present most generally used, but it is hoped that system-wide expansion of improved technical methods, such as mechanised relaying and long welded rails, the use of longer-lived sleepers and other improved materials may reduce the quantity of work necessary between overhauls and the volume of labour which is needed for maintenance.

Impressions of the Soviet Railways

Rebuilt stations in war-damaged provincial cities: low main-line passenger train speeds

(By a correspondent)

FROM a visit in December, 1953, to Southern Russia one of the most striking impressions gained was the attention paid to constructing magnificent stations, even when the railway services into and out of them is of the sparsest possible nature. Almost all the main stations shattered during the war have been either rebuilt, or re-erected on a palatial scale on slightly different sites.

In the Ukraine, the through station at Dniepropetrovsk presents a startlingly white facade, with marble staircases, and two wings equipped with neo-Georgian columns. At Odessa, a fine terminus has been built on the site of the old, which was destroyed during the war. Odessa is even more palatial, with the pseudo-Gothic appearance of its wings, and a great dome in the centre transept. The floors are marble throughout, and paintings of Russian express trains decorate the walls. An impressive painting, skilfully illuminated at night, shows the "Red Arrow" express at speed on its way from Leningrad to Moscow. Stalingrad station has been rebuilt in harmony with the rest of the new city. No smoking is permitted in these new stations.

A few main line trains were noted, most of them hauled by Pacific locomotives. Although most of the less important expresses were made up of six-wheel rolling stock with entrances at each end, all of them had a new air-conditioned sleeping car attached next to the engine. These new coaches, which are said to be in heavy production at the moment, tend to resemble American long-distance stock, and are equipped with roomettes. All main line trains have restaurant cars.

Punctuality Drive

A recent campaign against late running appears to have been remarkably successful, judging by the punctual arrivals seen, even by trains which had made lengthy journeys, as from Moscow to Odessa. Speeds remain rather low; the fastest train in the country is the "Red Arrow," allowed 10 hr. 51 min. from Leningrad to Moscow, just over 400 miles. Expresses in the Ukraine, and from Moscow to Stalingrad, have overall times calling for an average of only 31 to 32 m.p.h., including stops.

The Trans-Siberian express, which departs from Moscow daily for Vladivostock (with connections now through Harbin to Peking), is allowed 254 hr. 11 min. for the journey. There has been talk of running through coaches to Peking from March 1, when it is expected that the time of 13 days will be reduced to 250 hours. Although the Trans-Siberian train was four days late on one occasion during the visit, this fact was mentioned and criticised at length even in the newspapers. There are two trains a day from Odessa to Moscow, the express taking 44 hr. and the slow train 67 hr. Express trains linking the capitals of neighbouring countries behind the Iron Curtain have impressive rolling stock, particularly the Bulgarian train, and it is believed that every effort is made to impress Sofia with its scrupulously punctual arrivals.

As the re-opening of the Intourist arrangements permitting British and other foreign visitors to tour Russia in the near future is being debated, it is probable that the improvements on the Soviet railways will continue, although the Russian Airline (Aeroflot) must be regarded as a serious competitor, as far as competition is practicable under the Soviet system for such traffic. Like other European airlines, Aeroflot has two classes in its aircraft; "tourist" or "hard" class fares are slightly lower than those applying in "soft" class sleepers on the trains.

Full-length trains of fine articulated refrigerator vans were seen in marshalling yards; some express freight trains had corridor connections throughout.

Diesel shunters were in evidence, but most freight work in sidings was being performed by old 0-8-0 steam locomotives, with small lights playing on to their exposed driving wheels. No tank engines were observed.

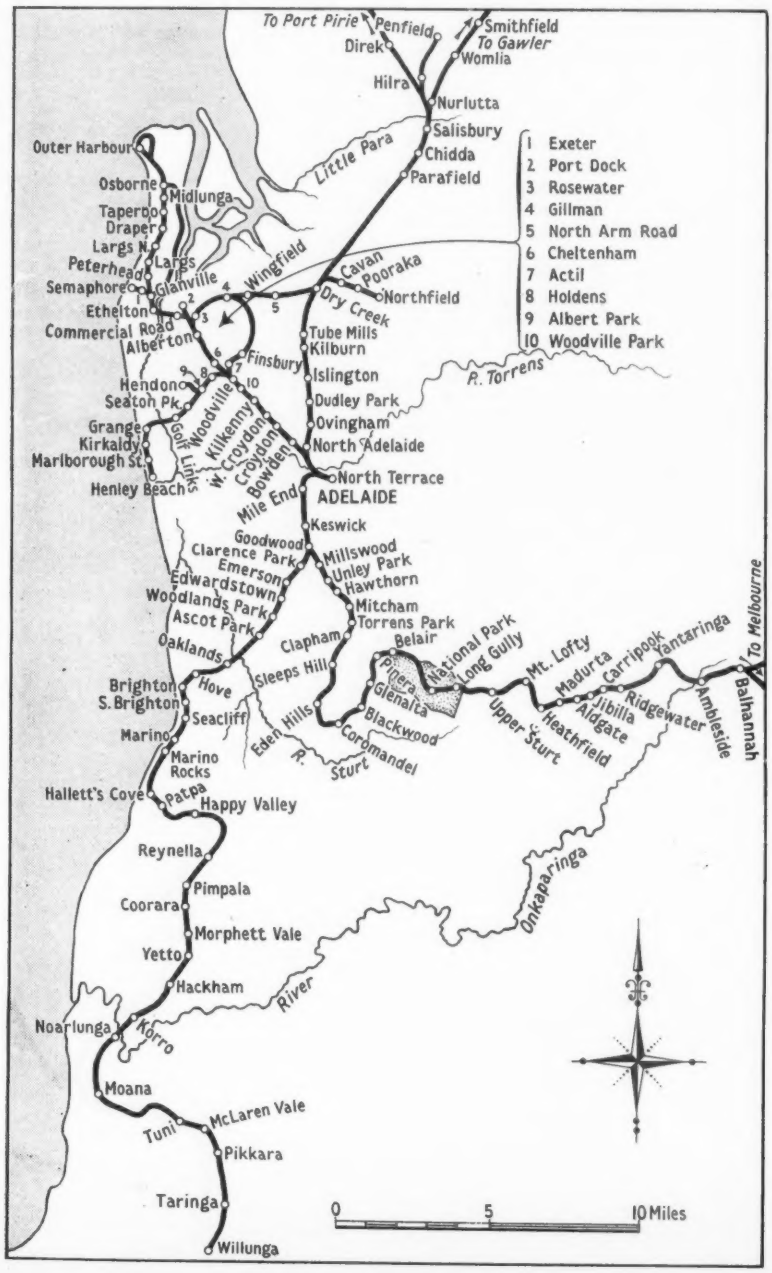
XUM

Improving Adelaide Suburban Services, South Australian Railways

Doubling of steam-worked lines which are included in electrification proposals

THE suburban railways of Adelaide, capital of South Australia, are still steam operated, unlike those of Melbourne and Sydney. Proposals for their future development put forward in 1949 hinged both on electrification and the doubling of busy single-track lines. They envisaged electric trains operating over some 55 route-miles, to Outer Harbour, Semaphore, Port Adelaide, Finsbury, Henley Beach, Marino, Dry Creek, Northfield, and Belair, and over several short industrial branches.

Associated with the electrification proposals was the doubling of the Brighton line from Goodwood to Marino which serves part of the suburban area to the south-west of the city and the coast suburbs of Brighton and Marino. It was also proposed that the Henley Beach line be doubled eventually. This line leaves the double track of the main route to Port Adelaide and Outer Harbour at Woodville and is single. It serves part of the north-western suburbs and several coast resorts almost due west of the city. Last May a railcar shuttle service between Woodville and Henley Beach was introduced in addition to the through trains, providing an extra eight services a day from Adelaide to Henley Beach.



Railways serving Adelaide and suburbs

Electrification Interim Report

Although some years have passed since the original proposals for electrification were made, the idea of development on this basis was not dropped and the South Australian Public Works Committee has made an interim report recommending electrification of Adelaide suburban railways. Enabling legislation would be required if the plan were adopted. It is understood that a final report on the doubling of the Henley Beach line is awaited. Whatever the outcome, a start has been made with the doubling of the Brighton line.

The work on the first five miles to Edwardstown is substantially complete, although double-track running is not in operation yet. It is hoped to proceed further with the scheme if loan funds become available from the 1953-54 loan programme. The next section to be completed is from Edwardstown to Oaklands.

The project was recommended by the Public Works Committee in March, 1950. It entailed doubling about eight miles of track from Goodwood to Marino, altering existing stations and providing new stations between Ascot Park and Oaklands and between Oaklands and Hove. The distance from Adelaide to Marino is 11¼ miles. Trains for this line, after passing westwards through the yards at Adelaide, turn left down the main Southern route alongside the Mile End freight yards and locomotive depot. The four tracks of the Southern line, accompanied for part of the way by a double goods line which comes in by a loop from the Port Adelaide line, continue as far as Goodwood, three miles from Adelaide.

Just beyond Goodwood two of the four tracks curve to the right and combine near the first station on the branch, Clarence Park, to form the single line to Marino. Over the past 20 years or so this branch has developed into an important suburban line and the rapidly growing traffic severely taxes the capacity of the single track.

Doubling began in July, 1950, and earthworks, ballasting and double track are complete to Edwardstown, as well as some preliminary work as far as Oaklands. The new up line between Emerson and Edwardstown was brought into use in June, 1952, and the original line, which will form the down track when the doubling is complete, has been temporarily put out of use pending realignment of track and alterations to the platform at Emerson as well as the installation of traffic lights and automatic boom gates at South Road between these two stations, where there is a busy five-road level crossing.

Marino Line Services

The Brighton and Marino line was opened on November 24, 1913, and a year later an extension was opened to Willungs, one of the nearer country resorts to Adelaide. Main suburban services end at Marino, but there is a railcar service twice a day to Halletts Cove about two miles further. When population warrants, it is possible that suburban services will be extended to Halletts Cove, which is becoming an outer seaside resort. The line also carries the country service to Willunga, which consists of one train both ways daily and two on Saturdays, passenger traffic being relatively small. Between Adelaide and Marino the weekday service consists of 35 trains a day both ways, including those to Halletts Cove and Willunga. At the evening peak period there is one train which works to Edwardstown only and returns a few minutes later.

At present the Marino line is being worked as a single one with crossing loops at Edwardstown, Oaklands and Brighton. Between Clarence Park and Emerson up and down trains are slewed across from the future down to the future up line, while the future up line is used between Emerson and Edwardstown.

Photo] [*Guy Bakewell*

Adelaide—Marino train leaving Oaklands, hauled by 4-6-2 *tank locomotive*

Photo] [*Guy Bakewell*

Railcar at Halletts Cove

Passenger trains to Marino are hauled by "F" class (4-6-2 type) tank engines. Heavier engines operate the steam services to Willunga, some 34½ miles from Adelaide. The first "F" class tank engines were turned out in 1902 and building of them continued during the next 20 years or more.

ALCO DIESEL REBUILDING SERVICE.—A locomotive rebuilding service established to rebuild and repair entire diesel units and their components is announced by the American Locomotive Company, which will use part of the diesel locomotive production facilities at its Schenectady plant for this purpose. Engineering assistance, guaranteed replacement parts, and highly skilled labour are among the advantages claimed for the rebuilding service; the company points out that many of the thousands of Alco diesels in operation, particularly those built during and before the last war, have reached a service age which justifies rebuilding or modernisation.

TREE TRUNK "THROWN ON TRACK."—Five boys were stated at Bristol juvenile court recently to have thrown a 2-cwt. tree trunk, part of an iron bedstead, and several large stones on to the railway track near St. Anne's Park Station, Bristol, Western Region. It was stated that as a result an express travelling to Bristol at 60 m.p.h., with 60 passengers on board, had to pull up suddenly. The boys, whose ages range from 13 to 16, were accused of maliciously throwing the articles on the track with intent to cause obstruction. Four of them were remanded in custody for a fortnight and the fifth was dismissed.

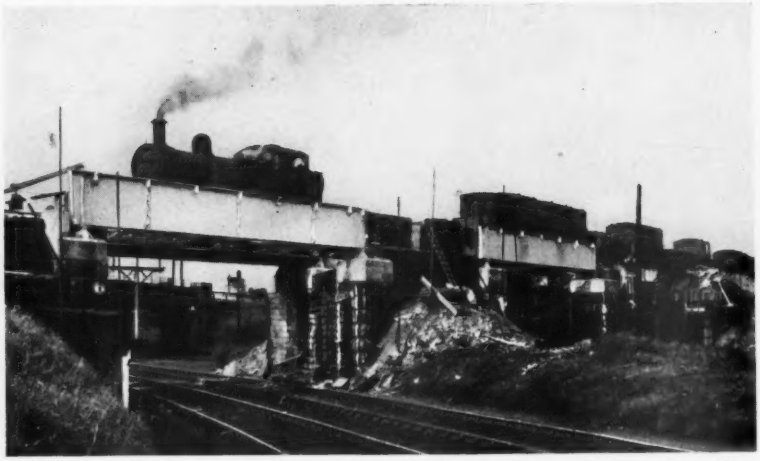
I.R.S.E. MEETING IN BOMBAY.—At the annual general meeting of the Western India Section of the Institution of Railway Signal Engineers held in the Western Railway of India offices in Bombay on December 31, Mr. J. S. Fiddes was elected Chairman for 1954 in succession to Mr. H. C. Towers, the retiring Chairman, and Mr. P. R. Mullan was re-elected Honorary Secretary & Treasurer. Mr. Fiddes, Mr. Mullan, and Mr. F. W. Duncan in addressing the meeting stressed the services of Mr. Towers as architect and promoter of the Section. Mr. Towers thanked the speakers and said that during the time the Section had been working he would have liked more papers and more discussion. Membership had been small, but it was now increasing because of the class of technician member recently introduced.

SAILING TICKET ARRANGEMENTS TO THE CHANNEL ISLANDS. — British Railways, Southern Region, announce that sailing tickets will be necessary for travel to the Channel Islands via Southampton on Fridays from May 28 to September 3 and on Saturdays via Weymouth from June 12 until August 28. They will also be required for certain other peak days in July. Bookings opened on January 25 for journeys in May and June; they will open on February 7 for the month of July, and on February 8 for August and September. To encourage mid-week travel, fifteen-day return tickets at reduced fares will again be available on Tuesdays, Wednesdays, and Thursdays from the beginning of April next to the end of October.

XUM

New Method of Bridge Reconstruction in the London Midland Region

Combination of welded steelwork and prestressed concrete



View of up line part of bridge during erection; traffic running on down line

A NEW and interesting method for the reconstruction of a bridge has recently been adopted at Carlisle by the London Midland Region. It is a combination of welded steelwork and prestressed concrete and was used in the reconstruction of bridge No. 244, which is of three spans of about 40 ft. each and carries a double line branch from the main Lancaster-Carlisle line to Crown Street Goods Depot. It is erected over the former Midland Settle and Carlisle line, the former L.N.E.R. Newcastle and Carlisle line, and through goods lines. The new structure replaces an old three-span bridge which had become due for renewal, and had been built with a very shallow construction depth and gave a limited headroom to the tracks below.

Of the factors which combined to influence the design of the new structure the foremost was the very small construction depth available. The steep gradient into the goods yard, and the very low headway under the bridge in each span made it impossible greatly to increase this depth. Also, as the traffic both over and under the bridge is heavy, a form of construction had to be devised which could be erected with the minimum interference with the running of trains.

The design adopted is of the through type with two outer girders and one centre girder to each span, with prestressed concrete floor slabs spanning between them, on which are placed steel plates with the running rails attached, thus reducing construction depth to a minimum. The new steel girders are all welded and have intermediate web stiffeners at 6 ft. centres, which carry special shear-plate connections for deck slab fixing and do not bear on the bottom flanges of the girders, but transmit floor loading direct to the web. The three girders in each span are tied across at 6 ft. intervals by steel tee sections. They also have welded steel pedestal bearings giving easy access for inspection and painting.

Precast Floor Slabs

To facilitate erection and lessen occupation time the prestressed concrete floor slabs were precast in 6 ft. widths and are connected to the stiffeners at each of their four corners. These slabs are 12 in. thick and weigh about five tons each, and were prestressed by the Freyssinet method using 12-wire cables.

Because the two piers are tapered in plan and average 21 ft. and 28 ft. thick respectively, a special problem was raised as it was considered undesirable to have differing forms of rail support throughout the total length of the bridge. This meant that the direct rail-to-concrete principle had to continue over the piers, and, because of the necessity of avoiding interference with traffic, the concrete here also was precast in slab form similar to the main spans. Because of the differences in skew between the spans and the complications that might have arisen therefrom at each bearing, the floor is made to run through from span to span over the intermediate piers, and to avoid the use of end cross-girders prestressing cables were passed longitudinally through the slabs and anchored at each end by means of Freyssinet cones.

As the low headway precluded the use of smokeplates, to protect the steelwork from smoke and blast the bottom flanges of the main girders were aluminium-sprayed before erection to a thickness of 0·006 in. and the remainder of the exposed steelwork was also sprayed with aluminium to a thickness of 0·003 in. The underside of the concrete slabs in the main spans was sprayed with a bitumen compound, and the top surfaces of all slabs were treated with a hardening solution.

Removal of Old Structure

The site work was carried out by first removing the whole of the existing superstructure, one span at a time, and erecting temporary way-beams to carry one line of traffic into the goods yard as each span was demolished, thus allowing half of the existing abutments and piers to be prepared for the new superstructure. At subsequent weekends the new steelwork and deck slabs

(*Continued on page* 158)

General view of new steelwork

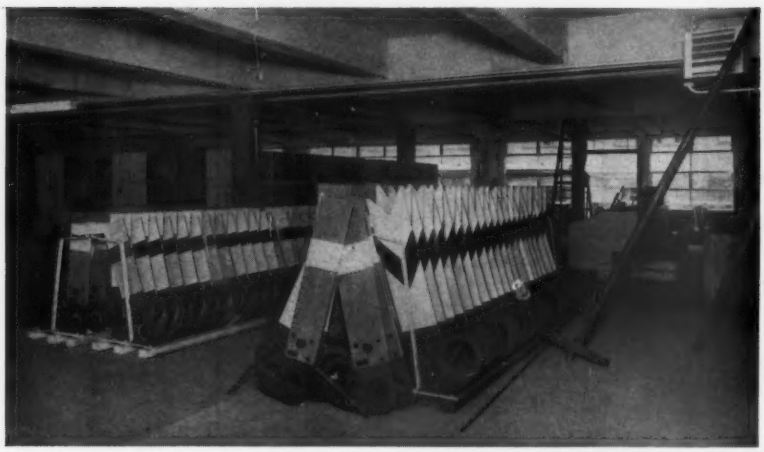
New Method of Bridge Reconstruction, London Midland Region

Placing the third centre girder in position

View from goods station end showing down line main girders and transverse ties

Western Region Signal & Telegraph Stores

Rebuilding of accommodation at Reading



Racks containing signal arms in ground floor warehouse

THE Western Region Signal & Telegraph Workshops at Reading have been completely rebuilt on modern lines and incorporate Stores Department warehouses to meet the requirements of the shops, out-depots, and lineside work. The new workshops and stores accommodation was completed in March, 1952. The main stores are on the west end of the new premises and are accommodated in a total area of approximately 40,000 sq. ft. in a section of the ground and first floors.

On the ground floor are the office accommodation and warehouses stocking the heaviest materials, such as castings and stampings, manufactured signal and telegraph fittings, iron and steel and battery materials. A hand-operated fork lift truck of 5-cwt. capacity is provided on this floor to assist in handling heavy and bulky materials. The first floor accommodates warehouses containing stores of a general character and materials for signal and telegraph instruments, telephones and parts. The receiving and despatching rooms for the adjoining warehouses and the Signal & Telegraph Engineer's test room are also on this floor. A generous circulating area has been provided adjacent to the lift to facilitate handling materials between the lift and store. The unit piling system is adopted for all items where possible to assist in speedy handling and verification of stocks.

Fluorescent lighting is installed throughout warehouses and offices. Hot water radiators are used to heat the offices and some warehouses but most warehouses are heated by the hot-air unit heating system.

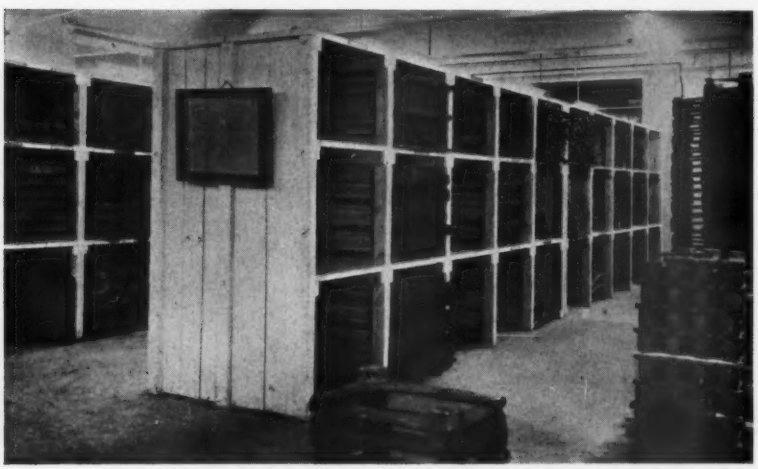
Signal fittings in foreground, and raised platform containing locking frame parts and bins for castings

Warehouse Stocks

Not all stocks are held in the main building; telegraph poles and reinforced concrete items and drums of cable are in the open yard. Timber and items required by the Civil Engineer are stocked in buildings adjacent to their respective workshop.

The combined warehouses carry a total of approximately 8,000 items, covering all materials appertaining to signal and telecommunication requirements, with various parts for clocks and watches, whose repair is the responsibility of the Signal & Telegraph Department. The value of these items held in stock is approximately £700,000.

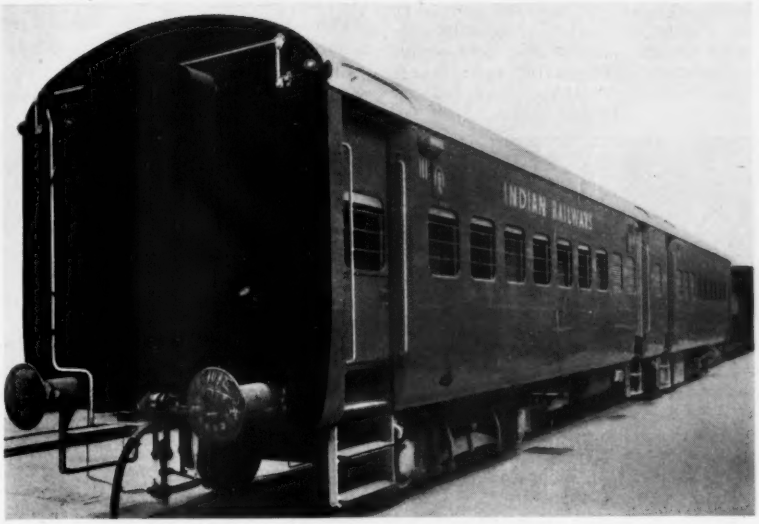
A weekly replacement of linesman's stores is made to stations between Reading and Paddington by stores van. In addition a regular monthly supply of maintenance stores is made to twenty-three out-depots. Delivery of materials required for a definite project is made direct to the sites. Scrap reclamation of ferrous and non-ferrous metals is also carried out.



Racks containing rough iron castings

Swiss-Built Carriages for India

Lightweight welded designs forming prototypes for future construction by the Indian Railways



Third and intermediate class composite coach with purdah accommodation, 5 ft. 6 in. gauge Indian Railways

AMONG the very large passenger stock orders placed in Europe over the last five years by the Indian Railways have been several contracts with the Swiss Car & Elevator Company, whose works are at Schlieren, near Zurich. This Company has for a number of years built all-welded lightweight steel coaches to its own special design, and early evolved a comprehensive stress-strain method of testing the body frame structure, this structure comprising underframe, sides and roof as an inseparable box structure.

Recently shipment from the Schlieren works was completed of 50 broad-gauge coaches for various Indian railways, these cars being of seven different types—first class, second class, intermediate class, third class, first and second class composite, second and intermediate class composite (some with women-only accommodation and some without), and intermediate and third class composite. In a sense, all these types can be regarded as revenue-earning prototypes for future Indian-built coaches.

At the time these coaches were being built in Switzerland a further set of 50 all-welded lightweight body shells was supplied, 45 of these being for third class vehicles. These 70 ft. coaches weigh 32 to 36 tons empty according to type, some weigh 6 to 8 tons less than previous Indian broad-gauge passenger carriages. The basic and overall dimensions of all the rolling stock supplied from Schlieren are the same, and are included in the accompanying diagram depicting a first and second class composite, this type actually being the heaviest of all; 36 tons. To comply with Indian specifications the structure had to meet an end buffing load of 200 tons, and a uniformly distributed vertical load of 45 tons.

Bogie Suspension

The bogies are of the so-called Swiss type, with roller-bearing axleboxes for which axlebox guides of the conventional type are replaced by a form of cylindrical guide within the helical suspension springs and containing hydraulic shock absorbers. These helical springs are separate from the bolster suspension system, which comprises an inverted laminated spring on each side. Low-carbon steel is the material of the welded bogie frame and bolster structures. An ordinary flat centre pivot supplemented by normal side bearers is fitted. Automatic vacuum brakes are embodied with cylinders carried below the car frame.

The gear-driven lighting generator on one bogie of each coach, and the interior lighting, were supplied by J. Stone & Co. (Deptford) Ltd., but the generator

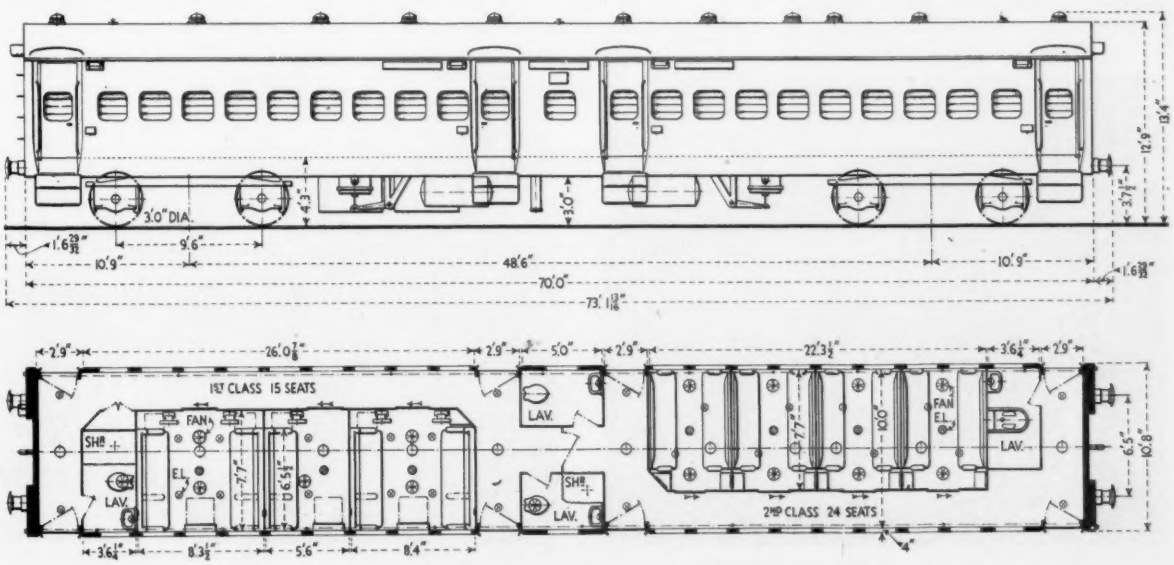


Diagram showing arrangement of seating

is on the Brown-Boveri principle and with fixing bolt holes corresponding with those of the B.B.C. generator so that either make can be fitted on any bogie.

Standardised Sides

A problem in the design of the various classes of coaches was to keep the same layout of doors and windows for first, second, intermediate and third class compartments.

This was eventually achieved, at the expense only of a rather narrow (5 ft. 6 in.) second class compartment. In designing the internal equipment and accommodation consideration was given to the provision of some sleeping facilities in all classes. The first and second compartments, with a side corridor down the coach, have the upholstered seats convertible into simple berths, and in addition folding berths are arranged above, and swung back into the partition during the day.

The intermediate class coaches have large racks used as berths at night. All coaches have four lavatories; those in the first class are fitted with showers. All compartments have fans, and all windows movable panes and adjustable louvres with additional mosquito grids in first and second class.

Lightweight Oxy-acetylene Cutting Machine

For straight-line, circle, or bevel cutting of mild steel

OXY-ACETYLENE cutting machines have for many years been standard equipment in locomotive, carriage and wagon, boiler, and general engineering workshops, and contribute considerably to the saving of both man and machine hours in the cutting of plate and other forms of steelwork. The British Oxygen Co. Ltd. has evolved a cutting machine known as the Bantam, for which many of the advantages of larger and more expensive equipment are claimed, besides lightweight construction.

The machine has been designed for versatility, and is of sturdy construction, weighing 23 lb. including the cutter. The operator can cut mild steel up to 2 in. thick, and when used in conjunction with the radius bar, circles of 3 to 45 in. dia. For bevelled edges the cutting head is adjustable, enabling an inclined cut to be made at any angle up to 45 deg. It is also adjustable for lateral movement and height.

One-Piece Nozzle

The cutter uses the Cutogen one-piece nozzle which gives clean, machine finished cuts on slow curves when free cutting. For this purpose the machine is steered by a handle at the rear of the machine. It can also be made to follow curves marked upon the plate surface. The castor trailing wheel can be locked for running on a track and disengaged for circle or profile cutting by means of an adjustment of the locating screw.

A 3-ft. light-alloy track is provided with the machine, and further lengths can be made available at extra cost. There is a reversing switch for straight cutting when maintained on the track, and to enable the nozzle to be quickly lined up over the work, a cross traverse arm is fitted with a quick-release locking lever.

Cutting Speeds

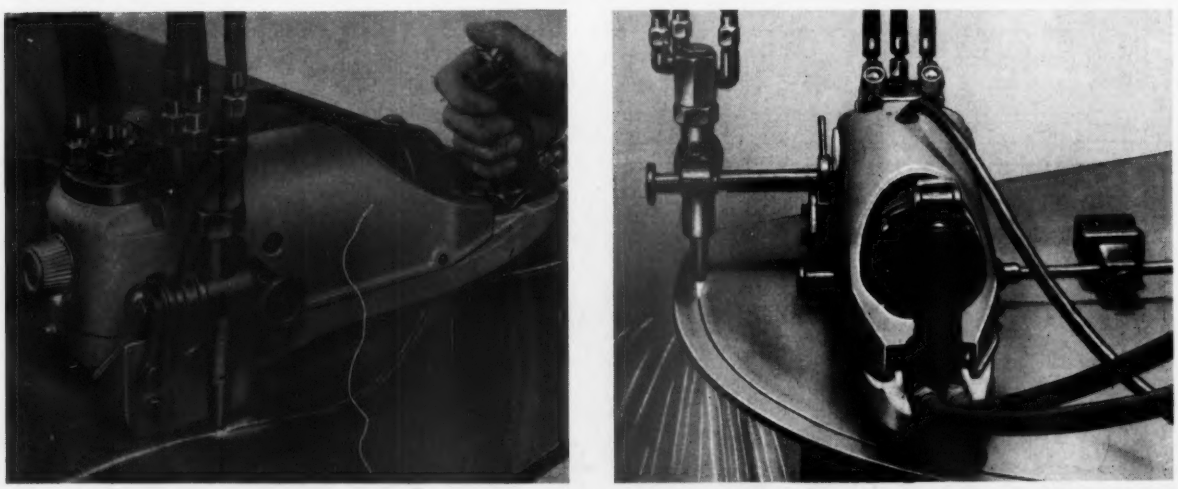
The machine has a straight line cutting speed of 130 ft. per hr. through $\frac{1}{4}$-in. thick plate, using a $\frac{3}{32}$-in. nozzle, 80 ft. per hr. through $\frac{1}{2}$-in. thick plate, using a $\frac{3}{64}$-in. nozzle, or 40 ft. per hr. through 2-in. thick plate, with a $\frac{1}{16}$-in. nozzle. Bevel cutting is accomplished at 66 ft. per hr. on $\frac{1}{4}$-in. plate with $\frac{1}{32}$-in. nozzle, 42 ft. per hr. on $\frac{1}{2}$-in. plate with $\frac{1}{16}$-in. nozzle, and with a similar nozzle 2-in. thick plate can be cut at 30 ft. per hr. All steel parts are oxidised, the light-alloy parts anodised, and the attachments chromium plated to prevent rusting.

New Method of Bridge Reconstruction, London Midland Region

(*Concluded from page* 154)

for the whole length of this side of the bridge were placed and a temporary sleepered track laid over the new decking. The temporary waybeams were then removed and the remaining portions of abutments and piers were prepared as before to accommodate the second half of the superstructure and so complete the new bridge.

The design was prepared and detailed by the Civil Engineer of the London Midland Region, and the welded girders and concrete slabs were fabricated in the shops at Newton Heath, Manchester. The site work and erection were carried out under the supervision of the District Engineer, Lancaster.



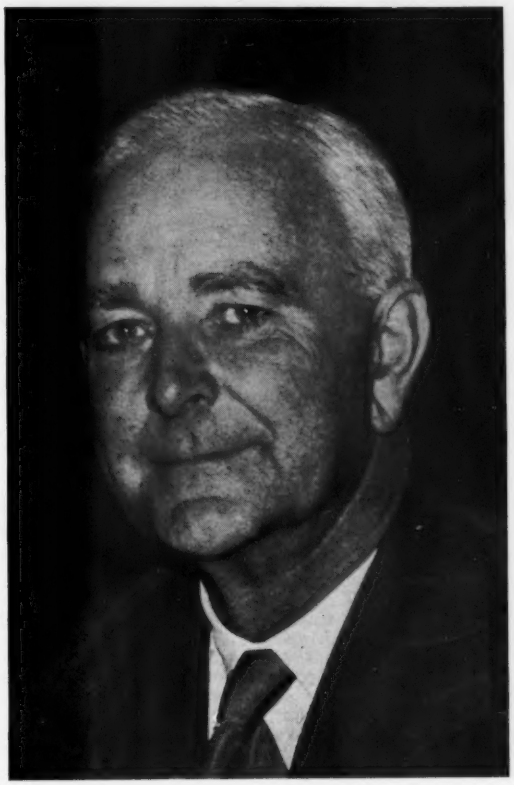
Bantam oxy-acetylene machine, showing (left) hand steering of cutting head and (right) use of radius bar to cut circle

RAILWAY NEWS SECTION

PERSONAL

At a meeting of the Irish Railway Clearing House Committee held on January 28, Mr. T. C. Courtney, Chairman, Coras Iompair Eireann, was unanimously elected Chairman of the Committee for 1954.

Mr. J. A. Fargher, M.C.E., M.I.E. Aust., who, as recorded in our January 15 issue, has recently been confirmed in the position of Commissioner of the South Australian Railways, was born in Victoria in 1901. He was educated at Melbourne University where he obtained his degree, after which he joined the Victorian Railways for a short period. In November, 1923, Mr. Fargher accepted the position of Structural Draughtsman in connection with the building of the new bridge over the River Murray at Murray Bridge, South Australia, to permit of heavier rolling stock being used on the main line between Adelaide and Melbourne. The next year he was transferred to the Chief Engineer's Office in Adelaide, and shortly afterwards became Draughtsman in Charge. When the building of a new jetty at Wallaroo (S.A.) was commenced in January, 1926, he was entrusted with important supervising work, subsequently resuming his appointment as Draughtsman in Charge in July, 1927. Towards the end of 1934, Mr. Fargher was appointed to the position of Designing Engineer, which position he held until early in 1946, when he received the appointment of Acting Assistant Chief Engineer. In July, 1947, he transferred to the Railways Commissioner's Office as Acting Assistant to the Railways Commissioner, a position in which he was engaged on important work in connection with research and investigation into all aspects of railway operation. In 1951, Mr. Fargher was appointed a Member of the Royal Commission constituted and appointed by the Governor-General pursuant to the provisions of the Port Augusta-Alice Springs Railway (Alteration of Route) Act, 1950, to examine, inquire into, and report on alternative routes for the construction of a standard-gauge railway between Stirling North and Brachina. Mr. Fargher was subsequently appointed Assistant Railways Commissioner.



Mr. J. A. Fargher
South Australian Railways Commissioner

Mr. L. C. Grubb
Appointed Assistant General Manager (Technical), South African Railways

Mr. W. Forrest, Signal & Telegraph Engineer, Victorian Railways, who, as recorded in our November 20 issue, has retired after 48 years service, was trained in instrument and telephone work when he joined the Department as an apprentice in 1905. When the telegraph and signal sections were amalgamated, he became a fitter and made a study of interlocking machines. He was subsequently appointed draughtsman in the Signal & Telegraph Branch. In the 1914-18 war Mr. Forrest served in both Egypt and France with the signal engineers and was commissioned. After the war he spent nine months with various British railway companies investigating signal engineering practice. He returned to the Department as a draughtsman and, after gaining wide experience in his branch's mechanical and electrical activities, he was appointed Signal Construction Engineer. For a time, he was in charge of the installation of automatic signalling for the Melbourne suburban electrification project. He rose to be Maintenance Engineer and, later, Assistant Signal & Telegraph Engineer. In 1944 he was appointed Signal & Telegraph Engineer. Mr. Forrest is a member of the Institution of Signal Engineers and an associate member of the Institution of Engineers in Australia.

Mr. L. C. Grubb, B.Sc.(Eng.), Chief Mechanical Engineer, South African Railways, who, as recorded in our January 29 issue, has been appointed Assistant General Manager (Technical) as from January 28, 1954, was born in London. He joined the South African Railways as a Pupil Mechanical Engineer in 1924. He was appointed Research & Test Engineer in 1937, and became Chief Superintendent (Motive Power) at Headquarters, Johannesburg, in 1942. After serving for a period as Mechanical Engineer, Pretoria, in 1945, he was appointed Assistant Chief Mechanical Engineer (Motive Power) in 1946, becoming Chief Mechanical Engineer in 1949.

Mr. Charles C. Gallicano has been appointed Assistant to the President of the American Car & Foundry Company.

Mr. H. F. Pallant

Confirmed Divisional Operating Superintendent, Crewe, L.M. Region

Mr. W. H. Evans

Appointed Assistant Chief Civil Engineer (Construction), South African Railways

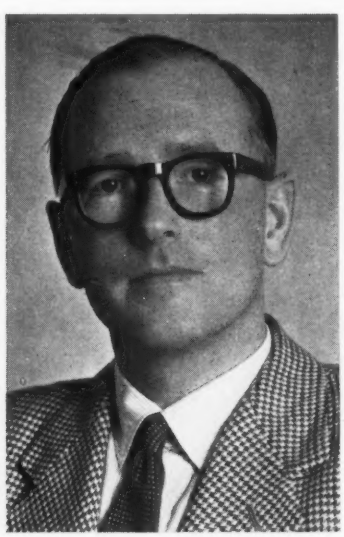
Mr. F. W. Tovee

Assistant Stores Superintendent, E.A.R. & H., who has retired

Mr. H. F. Pallant, who, as recorded in our January 29 issue, has been confirmed in the position of Divisional Operating Superintendent, Crewe, London Midland Region, British Railways, joined the service of the Great Eastern Railway as a Probationary Booking Clerk in June, 1916. After experience as Station & Relief Clerk in the Ipswich district, he qualified by examination for appointment as a Traffic Apprentice on the London & North Eastern Railway in October, 1925. Following a three years' course of special training, Mr. Pallant was appointed Assistant Yardmaster at Bradford, Adolphus Street, and, subsequently, to the following posts:—Assistant Yardmaster, Whitemoor (1930); Assistant Yardmaster, Spitalfields (1931); Assistant Stationmaster, Liverpool Street (1932); Chief Trains Clerk & Chief Controller, Cambridge (March, 1935); Assistant to Superintendent, Southern Area (Eastern Section) (June, 1935); Assistant District Superintendent, Edinburgh (Waverley) (1937); Assistant to Superintendent, Southern Area (Eastern & Western Sections), Liverpool Street (1939); District Superintendent, Nottingham (1940); District Superintendent, York (1943); District Superintendent, Hull (1945); Assistant Superintendent, North Eastern Area, York (1946). Mr. Pallant, who is a Member of the Institute of Transport, became Acting Divisional Operating Superintendent, Crewe, in February, 1953.

In 1939 he spent three months in Nigeria at the invitation of the Nigerian Government to investigate the operating problems of their railways and ascertain whether operating capacity could be increased.

Mr. William Herbert Evans, Inspecting Engineer (Construction), South African Railways, who, as recorded in our December 11 issue, has been appointed Assistant Chief Civil Engineer (Construction), joined the service on February 19, 1923, as a Junior Assistant engineer. While serving in this grade and as Assistant Engineer he was employed at 13 different centres. In August, 1936, he was appointed District Engineer at Volksrust, Transvaal, two years later moving to Stutterheim in the Eastern Cape Province to become Resident Engineer in charge of the Cape Eastern Main Line Improvements. During the 1939-45 War Mr. Evans rose to the rank of colonel, was twice mentioned in despatches, and was awarded the C.B.E. For a period of three years he was seconded to the Kenya Government. He transferred to the office of the Chief Technical Officer (Reconstruction), Johannesburg, in 1943, and early the following year was made Resident Engineer, Rand New Works, Germiston. In October, 1945, he was promoted Inspecting Engineer (New Works)

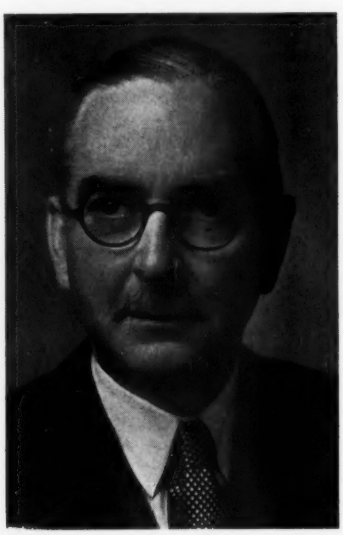


Mr. L. G. Dorman

Appointed District Engineer, East African Railways & Harbours

Mr. A. P. Lait

Appointed Assistant General Passenger Traffic Manager, C.N.R.



Photo] [*Bassano*

Mr. L. H. Short

Appointed General Export Manager, English Electric Co. Ltd.

at Headquarters, and, three years later, Inspecting Engineer (Construction), the position he recently reliquished.

Mr. F. W. Tovee, Assistant Stores Superintendent, East African Railways & Harbours, who, as recorded in our January 22 issue, has recently retired after more than 28 years service, served with the Royal Field Artillery during the 1914-18 war, and came to East Africa in 1922. He joined the Stores Department of the Uganda Railway in 1925, and was appointed Stores Accountant in 1929, District Stores Superintendent in 1934, and Assistant Stores Superintendent, East African Railways & Harbours in 1948. For many years Mr. Tovee was a member of the Railway African Welfare Committee, and throughout his career he took a keen interest in railway social and sporting activities.

Mr. L. G. Dormon, B.Sc.(Eng.), F.R.I.C.S., A.M.I.C.E., Assistant Engineer in the Engineering Department, East African Railways & Harbours, who, as recorded in our January 22 issue, has been appointed District Engineer, was educated at Aldenham School and London University. He was appointed to the service of the Kenya & Uganda Railways & Harbours as an Assistant Engineer in January 1946. Mr. Dormon was successively posted to Nairobi, Nakuru and Kampala. After further periods of duty at Tanga and Eldoret, where he was Engineer-in-Charge, Mr. Dormon was transferred to Nairobi Headquarters as Assistant Engineer in the Engineering Department.

Mr. A. P. Lait, Passenger Traffic Manager, Canadian National Railways, who, as recorded in our November 13, 1953, issue, has been appointed Assistant General Passenger Traffic Manager, joined the operating department of the C.N.R. in 1912. He transferred to the Passenger Traffic branch in 1915. Mr. Lait served with the Canadian Expeditionary Forces in the 1914-18 war and was awarded the Military Medal for action at Hill 70. Having been in charge of the company's office in Washington and New York, he is well known in diplomatic and international circles and has handled travel arrangements to and from Canada for many well-known personalities, including Sir Winston Churchill and the late President Roosevelt.

Mr. Leonard H. Short, M.C., M.I.E.E., M.Inst.T., Deputy General Export Manager of the English Electric Co. Ltd., who, as recorded in our January 29 issue, has been appointed General Export Manager of the company, was born at Backworth, Northumberland, on May 29, 1897 and educated at the Royal Grammar School, Newcastle-on-Tyne. He served during the 1914-18 war with the 7th Durham Light Infantry, and later with the R.F.C. and R.A.F., being awarded the Military Cross. After the war, he continued his education at the Faraday House Electrical Engineering College, later joining the English Electric Company as a pupil at its Preston works. From 1927 to 1929, Mr. Short was Resident Engineer in Bombay, India, in charge of the company's railway electrification contracts there. He returned to England for two years, after which, in 1932, he visited Brazil, Uruguay, and Argentine. Then, from 1933 to 1935, he was Deputy Chief Engineer & Manager in England of the company's Traction Department. During 1936 Mr. Short travelled through India, Ceylon, Australia, New Zealand, Dutch East Indies, Malaya, Egypt and Iraq on the company's affairs. In 1938 he again visited India and Ceylon and, in 1939, he paid his first visit to Portugal and Spain. In November, 1940, he joined Lord Willingdon's Mission to the Latin Americas and was responsible for writing the electrical reports for the Mission. In 1943, he re-visited Portugal to investigate the possibility of British interests taking part in the development of the Iberian Peninsula. In 1946, he joined Sir George Nelson's Mission, which visited the U.S.S.R. From 1947 to 1950 he again visited Portugal, Spain, the Argentine Republic, Brazil, and also the Union of South Africa, Mozambique and the Rhodesias. In 1948, he was appointed Comendador of the Military Order of Christ by the President of the Portuguese Republic, for his services to that country. Mr. Short, who is a Director of the English Electric Export & Trading Co. Ltd., was made Deputy General Export Manager of the English Electric Co. Ltd., in 1951, a position which he has held until the present time. He has just completed two years as Chairman of the Hispanic and Luso-Brazilian Councils.

Mr. W. B. Canning, B.Sc.(Eng.), A.M.I.C.E., who, as recorded in our January 22 issue, has been appointed District Engineer, East African Railways & Harbours, was born on January 20, 1915, and was educated at Prior Park College, Bath, and at Cardiff Technical College and Cardiff University. He joined the Kenya & Uganda Railways & Harbours as an Assistant Engineer in February, 1948, and served at Eldoret and Nakuru before being transferred to Tabora in February, 1952. He is now in charge of the Tabora Engineering District.

Mr. J. M. Fogarty, B.E.(1), A.M.I.C.E., Resident Engineer, Southern Province Railway, who, as recorded in our January 22 issue, has been appointed District Engineer, East African Railways & Harbours, was born on November 10, 1920, and educated at University College, Cork. He was appointed Assistant Engineer, Palestine Railways, on September 13, 1946, and transferred to the East African Railways & Harbours in 1948. He spent some time on both construction and open line duties in the Nairobi area before being transferred to Nakuru, where for some time he acted as District Engineer. In 1952 he was posted as Engineer-in-Charge, Port Works, Mtwara, and, in March, 1953, he took over the duties of Resident Engineer, Southern Province Railway.

Mr. A. F. Lucarotti, D.F.C., A.M.I.C.E., Acting Senior District Engineer, East African Railways & Harbours, who, as recorded in our January 22 issue, has been appointed District Engineer, was educated at the Salesian College, Battersea, Battersea Polytechnic, the Royal Technical College, Glasgow, University College, Nottingham, and the Nottingham & District Technical College. He joined the Tanganyika Railways as an Assistant Engineer in January, 1948, and was posted to Tabora. In October, 1951, he was transferred as an Assistant Engineer on the Western Uganda Extension Construction. He became Acting District Engineer, Kampala, in November, 1952, and, in July, 1953, he was transferred to Dar-es-Salaam as Acting Senior District Engineer.

Mr. T. W. Eydes, A.M.I.C.E., A.M.I.Struct.E., District Engineer, East African Railways & Harbours, who, as recorded in our January 22 issue, has been appointed Senior District Engineer, was educated at the Sheffield Intermediate Technical School, Sheffield University, and the Battersea Polytechnic. He was appointed a Civil Engineering Assistant, Directorate of Fortifications & Works, War Office, in 1935, and entered the service of the Tanganyika Railways in April, 1947, as an Assistant Engineer. After a period of service at Tabora he acted for some time as District Engineer, Dar-es-Salaam on the construction of the Southern Province Railway. Mr. Eydes was promoted to be District Engineer on January 1, 1952, and in March, 1953, he was appointed Acting Works Engineer, Headquarters, Nairobi.

Mr. G. Wallwork, B.Sc.(Eng.), A.C.G.I., A.M.I.C.E., Assistant to the Construction Engineer, East African Railways & Harbours, who, as recorded in our January 22 issue, has been appointed District Engineer, was born on November 20, 1921, and was educated at Haberdashers' Askes' Hampstead School and the City & Guilds College. During the 1939-45 war, Mr. Wallwork served with the Royal Engineers and had experience of railway construction in Italy. He joined the East African Railways & Harbours as an Assistant Engineer in December, 1948, and subsequently served at Dodoma, Mikindani, Mombasa and Mbeya. In April, 1952, he became Resident Engineer, Lighterage Berths Construction at Mombasa, and, in December of the same year, he was appointed Deputy Resident Engineer, Harbour Development Works, Mombasa. Mr. Wallwork now holds the post of Assistant to the Construction Engineer at Headquarters, Nairobi.

Mr. H. B. Marshall, who, as recorded in our January 22 issue, has been appointed Senior Mechanical Engineer (Motive Power), was born in 1912 and educated at Prescot Grammar School and Liverpool University, where he obtained a Bachelor of Engineering Degree in Mechanical Engineering. In 1933, Mr. Marshall commenced a two-year pupilage at the Horwich works of the London Midland & Scottish Railway, at the conclusion of which he was posted to Derby as a draughtsman in the experimental and locomotive testing section of the London Road drawing office. In 1938, he was appointed Assistant Locomotive Superintendent, Tanganyika Railways, and, after a short period at Dar-es-Salaam, was posted to Tabora. Late in 1941 he returned to Dar-es-Salaam but on the opening of the railways' Southern Highlands Road Services, transferred to Dodoma in charge of mechanical maintenance and operation of the Tanganyika Road Services. In 1946, he returned to Dar-es-Salaam as District Mechanical Engineer (Running) and for a time acted as Chief Mechanical Engineer, Tanganyika Railways, during the overseas leave of the substantive holder. In 1950, following the amalgamation of the East African Railways, Mr. Marshall was transferred to Mombasa as District Mechanical Engineer, returning to Dar-es-Salaam at the end of 1951 to assume charge of the activities of the Chief Mechanical Engineer's Department, Tanganyika section, of the East African Railways & Harbours, remaining there until being transferred to Nairobi to take up his present post in October, 1953.

Mr. John L. Bickley, Assistant Passenger Traffic Manager, United States lines, Canadian National Railways, who, as recorded in our October 16 issue, has been appointed Passenger Traffic Manager, United States lines, of the same system, will have his headquarters in Chicago. Mr. Bickley's service record extends back 32 years. He began his career in 1921 as a clerk-stenographer in Cincinnati and served as a Travelling Passenger Agent at Cincinnati

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and Detroit from 1924 to 1940, when he was promoted to Assistant to the Passenger Traffic Manager at Chicago. Seven years later, he was named General Passenger Agent. Since 1951, he has been Assistant Passenger Traffic Manager for U.S. lines of the C.N.R., with headquarters in New York City. He is a past president of the Canadian Club of Chicago, and is a member of the executive committee of the American Association of Passenger Traffic Officers. He is an honorary life member of the American Association of Railroad Ticket Agents and the American Association of Passenger Traffic Agents. He is also a member of the American Association of Passenger Rate Men.

Mr. J. T. Whiteford, Manager, Passenger Service Bureau, Canadian National Railways, who, as recorded in our November 6 issue, has been appointed General Passenger Traffic Manager, has, in the course of his 40-year railway career, acquired an intimate knowledge of passenger traffic matters. During the past two decades he has been actively associated with the American Association of Passenger Traffic Officers and the American Association of Passenger Rate Men, international organizations concerned with railway passenger developments on this continent. In 1928, Mr. Whiteford was one or the organisers of the railway's tourist and convention bureau. He is an international authority on railway passenger rate structures, schedules and services. Mr. Whiteford was born in Paisley, Scotland. He joined the Canadian Northern Railway, now part of the C.N.R., as a junior clerk at Toronto in 1913. After filling various posts there and in Montreal, he came to system headquarters as Assistant Manager of the Passenger Service Bureau in 1943. He was appointed Manager of the Bureau later in the same year.

The following retirement and appointments in the department of Motive Power & Rolling Stock of the Canadian Pacific Railway have been announced:—

Mr. R. B. Winship, Mechanical Engineer (Car) since 1941, has retired on pension. Mr. Charles Hassall, Engineer of Car Equipment for the last three years, has taken over Mr. Winship's duties but retains his old title.

Mr. W. F. Sinclair has been appointed to the new position of Engineer of Motive Power, and the old positions of Engineer of Diesel Equipment, held by Mr. Sinclair, and Mechanical Engineer (Locomotive) have been abolished.

Mr. A. E. McGruer, formerly General Electrical Engineer, has been appointed Engineer of Electrical Equipment, and his former title discontinued.

Mr. G. C. Tompkins, Production Manager of the Angus Shops at Montreal, Canadian Pacific Railway, has been appointed Assistant Works Manager (Car) at the Angus Shops. He succeeds Mr. Bernard Faughnan, who retired at the end of last year.

We regret to record the death, in Johannesburg on January 18, of Mr. G. E. Taylor, who retired from the position of Technical Investigation Officer (Electrical), London Transport Executive, last November. Mr. Taylor began his career as pupil and junior engineer with the Newcastle-on-Tyne Electrical Supply Company and joined the Metropolitan Railway in 1919 as a draughtsman. He was Substation & Supplies Engineer until October, 1950, when he was appointed Technical Investigation Officer and made responsible to the Chief Electrical Engineer for all technical investigations and developments, including the work of the Testing Section.

We regret to record the death, at the age of 70, of Mr. F. C. Watkins, a former President of the Railway Clerks' Association.

Mr. G. Wynne Davies, formerly Publicity Officer to the Railway Executive, has been appointed Assistant Commercial Superintendent, Southern Region, British Railways.

Mr. W. M. Ross, Assistant Regional Staff Officer, Scottish Region, British Railways, has retired after 51½ years of railway service.

Mr. J. B. Faulkner, Assistant Estate Manager and Rating Agent, London Midland Region, British Railways, has been appointed Estate and Rating Surveyor of that Region.

Mr. F. Fawcett, A.M.I.C.E., District Engineer, Derby (South), London Midland Region, British Railways, has been appointed District Engineer, St. Pancras.

Mr. E. D. Trask, Motive Power Superintendent, Scottish Region, British Railways, has been appointed Motive Power Superintendent, Eastern Region, as from February 1, 1954.

Mr. E. H. C. Shorto, Acting Coal Supplies Officer, Motive Power Superintendent's Department, Derby, London Midland Region, has been confirmed in that position.

Dr. K. P. Duncan, B.Sc., M.B., Ch.B., Area Medical Officer, London Bridge, Southern Region, British Railways, has gained the Diploma of Industrial Health of the Society of Apothecaries.

Mr. R. S. Pedder, Assistant (Electric Traction & Generation), London Midland Region, British Railways, has been appointed Principal Assistant (Electrical), Mechanical & Electrical Engineer's Department, Derby.

Mr. W. O. Reynolds, M.B.E., District Operating Superintendent (Southend District), Fenchurch Street, Eastern Region, British Railways, has been appointed District Operating Superintendent, Leeds City, North Eastern Region. He will take up his appointment on February 8.

Mr. R. C. Hider, Superintendent (Traffic), London Transport Executive, has been appointed Divisional Superintendent, "A" Division (Metropolitan & Bakerloo Lines), in the Department of the Operating Manager (Railways) of the London Transport Executive.

Mr. Clement Durrant, General Agent for France, British Railways, has been awarded the Legion d'Honneur. He was presented with the insignia of the order by Mr. Louis Armand, General Manager of the French National Railways, on January 30.

Dinner to Mr. A. E. Hammett

At a dinner at the Charing Cross Hotel, London, on January 28, Mr. David Blee, Chief of Commercial Services, British Transport Commission, on behalf of the members of the B.T.C. Commercial Committee and of the Rates & Charges Committee, presented Mr. A. E. Hammett, who recently retired from the position of Commercial Superintendent of the London Midland Region, with a cheque as a token of their appreciation and good wishes. Mr. Blee, together with the Regional Commercial Superintendents and other Officers, paid tribute to the outstanding ability of Mr. Hammett and to the friendly cheerfulness he had displayed at all times. Mr. Hammett in responding stressed that he had always regarded his "Company's" business as his own and he could commend this policy to anyone. He intended to purchase a wing armchair which would never fail to remind him of the happy companionship of his fellow Commercial Superintendents. Those present included Messrs. D. Blee, C. Dandridge, E. W. Arkle, T. H. Hollingsworth, W. H. F. Mepsted, C. Furber, D. McKenna, H. H. Phillips, J. E. M. Roberts, D. Murray, A. A. Harrison, W. S. Cutler and H. S. Hunt.

Sir Cyril Birtchnell, K.C.M.G., C.B., has joined the board of Meat Transport Organisation Limited.

Mr. B. H. Dulanty has been appointed Chairman of Silentbloc Limited, succeeding Mr. H. Vezey Strong.

Mr. J. H. R. Nixon, M.I.Mech.E., has been elected Chairman of the East Midlands Branch of the Institution of Mechanical Engineers.

Mr. Michael Parkinson has been appointed General Manager of the Guiseley Works of Crompton Parkinson Limited.

Mr. G. Lloyd Jones has been appointed Manager of the British-Thomson-Houston Co. Ltd.'s Cardiff District Office, succeeding Mr. A. F. MacCarthy, M.I.E.E., who is retiring.

Mr. G. R. Curry, M.A., has been appointed Secretary of the Locomotive Manufacturers' Association to fill the vacancy created by the retirement of Mr. J. W. Vaughan.

Dr. W. B. Whitney, M.I.C.E., M.I.E.E., has retired from the British Electrical & Allied Industries Research Association. He is continuing his connection in a part-time capacity.

Mr. C. C. H. Wade, Manager of Traction Sales & Contracts, English Electric Co. Ltd., has been elected Chairman of the Internal Combustion Engine Group of the Locomotive Manufacturers' Association, in succession to Mr. Gerald Collingwood.

We regret to record the death on January 27, at the age of 71, of Mr. A. J. D. Kitson, Railway Representative for W. M. Still & Sons Limited. Mr. Kitson had served the company for 45 years. Cremation took place at Mortlake on February 2.

The Brush Electrical Engineering Co. Ltd. announces that Mr. H. L. Wickes, A.M.I.E.E., has been appointed to the post of Sales Specialist (Motors), operating from Loughborough Works. Mr. Wickes, who was previously Sales Manager of Higgs Motors Limited, Birmingham, will take up his duties on February 1.

In succession to Mr. W. L. James, who, as previously recorded, becomes Chairman of the parent company, Mellor Bromley & Co. Ltd., Leicester, Mr. G. A. Hannah has been appointed Managing Director of Pegson Limited, Coalville.

Permanent Way Institution Meeting and Conversazione

Many gatherings and visits by sections of the Institute at home and overseas

The 70th annual winter meeting of the Permanent Way Institution was held at the Institution of Civil Engineers, London, on January 30. The President, Mr. M. G. R. Smith, Civil Engineer, British Railways, Western Region, was in the chair. Over 170 members attended from all parts of the country, including Mr. J. C. L. Train and Mr. J. Taylor Thompson, Past Presidents. Also present were Mr. F. Q. den Hollander, President of the Netherlands Railways, and Mr. J. L. A. Cuperus and Mr. J. L. Hoorweg of that system.

Mr. Smith announced that the Institution had been signally honoured by the acceptance of honorary fellowship by H.R.H. The Duke of Edinburgh and this news was received with applause by all present.

The Secretary, Mr. H. Janes, submitted a report of the activities of the Institution during the past year, mentioning the acceptance of the office of President in January, 1953, by Mr. M. G. R. Smith and his visits to many sections. The arranging for a conversazione on January 31, 1953, instead of the customary winter dinner, it was stated, had proved quite a success, over 400 members and guests being present. Thanks were due to Mr. J. A. R. Turner, Corresponding Secretary, London Section, who had made all arrangements for this function.

During the year there had been 229 meetings and visits by home sections. Overseas sections had also arranged gatherings as convenient, and the Rhodesia Section had shown much activity, meetings taking place at the sub-section centres of Bulawayo, Gwelo, Livingstone, and Salisbury.

A Past President, Lt.-Colonel H. B. Everard, now General Manager, Rhodesia Railways, had given his support and assistance to the expansion of the Institution in Rhodesia, and the membership in that country now exceeded 270.

The number of members enrolled in 1953 was 434, consisting of 21 Fellows, 68 Associate Fellows, 37 Members, 292 Associate Members and 16 Students.

Election of Office Bearers

Mr. J. Taylor Thompson then proposed the re-election as President of Mr. M. G. R. Smith, emphasising the great interest which Mr. Smith had in the work and welfare of the Institution. This proposal was seconded by Mr. J. I. Campbell and carried with acclamation. In replying, Mr. Smith said that the past year had been a very happy one. During 1953 he had visited about one-half of the 25 home sections and as he was anxious to visit the remainder his re-election would give him the opportunity.

The following were elected as Vice-Presidents :—

For England, Mr. J. Dobson ; Scotland, Mr. W. Paterson ; Wales, Mr. J. Cunningham ; Ireland, Mr. P. Quinn ; Rhodesia, Mr. B. H. Johnson ; Sudan, Mr. J. P. H. Stein ; India, Mr. J. E. Jack ; Malaya, Mr. D. G. Mack

The officers were re-elected:—

Secretary, Mr. H. Janes ; Treasurer, Mr. F. Lawson ; Editor, Mr. H. Ormiston ; Auditors, Mr. Hector Hall and Mr. L. T. Starks.

Arrangements for 1954 Summer Meeting

After Members of the Council and various committees had been elected, Mr. H. Ormiston gave particulars of the 1954 summer meeting and convention to be held in Yorkshire with headquarters at Scarborough, from May 29 to June 3. Visits will be made to engineering works on Tees-side, York, and Hull. During the week a civic reception will be given at Scarborough by the Mayor.

At the conclusion of the business agenda, Mr. C. E. Dunton, Chief Civil Engineer, London Transport Executive, gave an address entitled "Civil Engineering on London Transport," illustrated by lantern slides depicting structures, permanent way, signalling, and so on; a large working model was exhibited to show special signalling arrangements brought into use to maintain train headway during engineering work or other reason which may necessitate reduction of speed.

At the conclusion of the address Mr. A. S. Quartermaine proposed a vote of thanks to Mr. Dunton, and this was seconded by Mr. J. Ratter.

Conversazione

The second annual conversazione of the Institution was held at the Headquarters of the British Transport Commission, 222, Marylebone Road, N.W.1, on January 30.

Over 350 members and their ladies were received by the President, and the following guests were present:—

Sir Brian Robertson, Chairman, and Sir John Benstead, Deputy Chairman, British Transport Commission ; Mr. F. Q. den Hollander, President, Netherlands Railways ; Mr. John Elliot, Chairman, London Transport Executive; Sir Reginald Hill, Chairman, Docks & Inland Waterways Board of Management ; Mr. K. W. C. Grand, Chief Regional Manager, Western Region ; Mr. C. P. Hopkins, Chief Regional Manager, Southern Region ; M. Robert Levi, Chief Engineer, French National

(Left) Sir Brian Robertson addressing the Permanent Way Institution conversazione on January 30. *(Right) The President, Mr. M. G. R. Smith, at the microphone, with Mr. F. Q. den Hollander*

Railways; Mr. J. L. A. Cuperus, Netherlands Railways; and Mr. J. L. Hoorweg, President of the Netherlands Permanent Way Institution

The Members of the Institution attending the function included the following and many were accompanied by their ladies :—

Messrs. G. D. S. Alley, F. R. L. Barnwell, W. F. Beatty, G. E. Bedford, D. R. Bennett, W. H. Best, J. F. Bickerton, W. T. Bowen, K. Brinsmead, J. I. Campbell, J. S. Campbell, J. A. Carey, T. A. Carson, H. Chanter, E. C. Cookson, N. S. Cox, J. Cunningham (Vice-President for Wales)

J. R. Dallmeyer, J. Dobson (Vice-President for England), C. E. Dunton, H. Eagers, C. W. Edwards, R. H. Edwards, A. Forrester Fielding, N. Glennon, W. Grant, H. J. Green, J. R. Hammond, L. E. Hawkins, M. A. Henry, W. Hipwell, O. Humphreys

G. A. James, H. Janes (General Secretary), W. D. Johns, L. J. M. Knotts, F. L. Lambert, A. C. Maber, E. J. M. Matheson, R. C. Mosedale, H. C. Orchard, H. Ormiston (Hon. Editor), W. Paterson (Vice-President for Scotland), A. N. Plumer, F. J. J. Prior

A. S. Quartermaine, P. Quinn (Vice-President for Ireland), John Ratter, H. R. Reynolds, H. H. Robinson, N. S. Robinson, L. G. B. Rock, W. H. Roden, W. Rothwell

L. S. Sanson, C. E. R. Sherrington, S. Stevens, S. A. Strange, N. W. Swinnerton

J. Taylor Thompson (Past President), A. K. Terris, A. G. Ticehurst, J. C. L. Train (Past President), J. A. R. Turner, F. Wensley, J. D. West, I. G. White, and A. W. Woodbridge

Early in the evening Mr. M. G. R. Smith addressed the company. He welcomed the guests, and expressed regret at the absence of Mr. Alan Lennox-Boyd, Minister of Transport & Civil Aviation, who had been prevented from attending. On behalf of the Institution he extended a warm welcome to Sir Brian Robertson, to Sir John Benstead, and to the other guests from the British Transport Commission, to Mr. den Hollander and the other guests from Holland, and to Monsieur Levi.

Mr. Smith added that Mr. Hoorweg had told him that the Netherlands Permanent Way Institution already had 1,200 members.

Family Pride on British Railways

Sir Brian Robertson expressed special pleasure at meeting the wives of many of those present, because, he said, wives were part of the great British Railways family.

He was anxious, he continued, to encourage—or rather restore—local pride in various parts of the railway organisation. The old railway companies had something there which he would not say had gone but perhaps was diminishing a bit, and it was very right that it be encouraged and restored. He was quite certain it could be done. He was glad that they had this Institution, which reflected the pride and interest they had in their craft. This meant a wider loyalty to British Railways, the big family as a whole.

Criticism of the Railways

He went on to say that he felt that the sniping that had gone on for some time at British Railways had been a bit overdone, and that criticism, often unknid and sometimes possibly malicious, had gone a little too far. It was time that some tribute was paid to the good work British Railways had done and were doing, with some recognition of the very loyal work put in by the hundreds who served British Railways.

The second reason he was glad to be there was his interest in the Institution. He was particularly attracted by the way in which it threw open its membership to all grades who were part of the staff on the permanent ways and signal and telegraphs, and that that night there were lengtnmen, and inspectors, gangers and many others of all grades.

It was, he said, very important in their organisation also that men should take trouble, and he assumed that those who joined this Institution did so because they were seriously minded about their profession and wished to get on in it.

Sir John Benstead said he was glad to meet many old friends. Forty years ago he had lodged with a G.N.R. ganger, the best " digs " he had ever had.

Relations with the Netherlands

Mr. F. Q. den Hollander recalled the gales and floods of a year previously, when both Britain and the Netherlands had relied on transport, which meant railways, to set matters right, and railwaymen had done a magnificent job in both countries.

Railways had been born in Great Britain. Everything in their technique in the railway industry reminded them of Britain. In Holland they now had an organisation for research and experiments, and British engineers and many others on British Railways paid tribute to the work of the O.R.E. at Utrecht.

Earth Moving Equipment

A series of demonstrations of earth moving equipment used in conjunction with Ferguson tractors, was given by Eastern Tractors Limited, Springfield, Chelmsford, on January 28. The demonstration served to illustrate the use of the Ferguson tractor as such, and its uses for industrial, civil, and railway engineering purposes when attached to mechanical equipment and used as a prime mover. Trench cutting was carried out with the Allen tractor attachment manufactured by John Allen & Sons (Oxford) Ltd.

The machine is hydraulically controlled by a Hardy-Spicer propeller shaft which transmits the drive from the back axle gearbox of the Ferguson tractor to the hydraulic pump. Three levers control all the actions of digging, raising the boom, bucket operation, and right or left swing. The machine has a maximum depth of cut of 8 ft. 6 in., a maximum cutting width of 2 ft., and a maximum loading height of 12 ft. 9 in.; it can be converted for shovelling operations by changing the type of bucket. By-pass valves cut off hydraulic power as pressure rises should the bucket hit an underground obstruction.

High-lift loading of gravel soil and so on was demonstrated by the Ferguson cantilever high-lift loader in conjunction with trailers.

The equipment consisted of a pressed-steel framework composed of two main booms of oval cross section. The mechanism is hydraulically controlled by two levers near the driving seat, and a patented valve and circuit assembly prevents damage to the tractor hydraulic system. The machine is operated by the tractor driver and has a bucket capacity of ¼ cu. yd. and a maximum discharge height, with the bucket tipped, of 8 ft. 6 in. A feature of the loader is its unobstructed long reach.

Post-Hole Digging

A further demonstration included the use of the Ferguson post-hole digger, which is suitable for railway and other fencing. The digger will excavate under most soil conditions, boring accurate holes to a depth of 36 in. with a 9-in. or 12-in. auger in less than one min. Drive is by the power take-off from the tractor, and the digger, which is raised and lowered by finger-tip control from the driving seat, is free to swing in any direction, a feature which allows the auger to operate under any circumstances.

Post-hole boring was also demonstrated by the use of a machine of larger capacity and built by Tayman Limited, Kingswood. This drills a hole 18 in. dia., 6 ft. 6 in. deep, in some 12 min. Control is by a hydraulic pump mounted on the tractor supplying 14 gal. of oil per min. at 2,000 p.s.i. through a heavy-duty flexible pipe to a relief and control valve and hydraulic motor which drives the cutting plate through a reduction gearbox.

The hydraulic mechanism is located in the oil reservoir and is totally enclosed and the drive unit is located above the drill spindle, thus giving good penetration. The machine is fitted with an overlapping device to prevent damage.

Compressed Air Tools

Air compressors and compressed air tools were also demonstrated and included Holman, and Atlas equipment, using the tractor as a prime mover. The Silver Eight rock drill was demonstrated, the latest edition to the Holman, hand-held rock tools; it is designed to operate efficiently at pressure as low as 40 lb. per sq. in. and to a depth of 6 ft.

Other demonstrations included the Sturdiluxe road sweeper manufactured by H. Young (Motors) Limited, Chester-le-Street, and verge trimmers of the Somerset and Devon type built by E. V. Twose Limited, Tiverton. In all cases the tractor was used as the prime mover.

Parliamentary Notes

Thesiger Report

Mr. Alan Lennox-Boyd (Minister of Transport) in a written reply to questions by Mr. Ernest Davies (Enfield E.—Lab.) and Mr. Roland Robinson (Blackpool S.—C.) as to Government intentions in regard to the Thesiger Report recommendations, stated that he accepted the committee's view as to the value of the present licensing system and their statement that "what we consider should be left untouched is quite as important as are the comparatively few changes that we propose."

He agreed with most of the proposals for the detailed improvement of the licensing system and proposed to give effect to them as opportunity offered.

Another important problem dealt with in the report, he added, was the effect on the licensing system of the control by the B.T.C. of undertakings providing road passenger services in the provinces. He did not dissent from the committee's general conclusions on this question so far as they went.

Questions in Parliament

B.T.C. Capital Expenditure

Mr. F. J. Erroll (Altrincham & Sale—C.) on January 27 asked what Government restrictions existed at present on capital expenditure by the B.T.C.

Mr. Alan Lennox-Boyd (Minister of Transport & Civil Aviation) wrote in reply : I am not aware that any Government restrictions on capital expenditure are preventing the Commission from carrying out its existing investment plans where labour and materials are available.

Export of Locomotives to U.S.S.R. and China

Mr. J. C. Forman (Glasgow Springburn—Lab.) on January 28 inquired if the President of the Board of Trade would have the security ban lifted on the export of British locomotives to U.S.S.R. and China.

Mr. Peter Thorneycroft replied: There is no ban on the export of locomotives to the Soviet Union, although exports are subject to control. In the case of China the ban must at present remain in force in accordance with our obligations under the United Nations Additional Measures Resolution of May 18, 1951.

Mr. John Rankin (Glasgow Tradeston—Lab.): Why should we be handcuffed in this matter when the American administration is already turning its eye towards the development of more trade with China?

Mr. Thorneycroft: There is no truth whatever that we are under a disability relative to the U.S.A.

Mr. Eric Fletcher (Islington E.—Lab.) said that in view of the "totally unsatisfactory" replies of the President of the Board of Trade he would raise the matter on the adjournment.

Staff & Labour Matters

Railwaymen's Wage Claim

At the meeting held on January 28 to consider the question of a further improvement in railway wages on a percentage basis, representatives of the N.U.R. asked the Chairman of the British Transport Commission for an increase which amounted to approximately 6½ per cent. This was in response to the Commission offer made at a previous meeting of an increase of 6 per cent on the standard rates of pay which were operative prior to Decision No. 15 of the Railway Staff National Tribunal. The union wished the increases offered by the Commission to be rounded off, so that a 1d. or fraction of a 1d. would count as 6d. Thus a man whose salary was increased by 7s. 1d. would get 7s. 6d.

The 6 per cent increase would cost the Commission some £12,500,000 a year and would involve increases ranging from about 7s. a week for the minimum rated grades to £45 a year for the highest-paid clerical grades covered by the negotiations with the trade unions.

The reply of the Commission to the latest demand was considered at a meeting of the N.U.R. Executive on February 1. It was subsequently announced by the N.U.R. that the union was prepared to accept the Commission offer to increase the standard rates by 6 per cent, this increase to include the 4s. a week awarded by the Railway Staff National Tribunal in December last.

It was pointed out on behalf of the Commission that the Commission offer fully implements the undertaking given before Christmas as to the percentage increase, and that meetings to review the wage and salary structure and to evolve ways of increasing the efficiency of the railway organisation were expected to take place shortly.

Interim Settlement

The acceptance of the offer by the N.U.R. is on the understanding that it is only an interim settlement and that the whole wages structure will be examined; the union has expressed disappointment that a bigger percentage increase had not been offered. The other two railway unions, the A.S.L.E.F. and T.S.S.A., had previously accepted the proposed increases.

Contracts & Tenders

The South African Railways have placed an order for 1,000 bogie grain wagons with Dorman, Long (South Africa) Limited.

British Railways, Scottish Region, have placed the following contracts:

H. M. Murray & Company, Glasgow: strengthening of Wemyss Bay Pier

James Lamont & Co. Ltd., Greenock: overhaul and survey of T.S.S. *Duchess of Montrose*

British Railways, Eastern Region, have placed a contract with Kirk & Kirk, Limited, London, S.W.15, for the construction of a signalbox, covered bench, goods offices and weighbridge shelter at Potters Bar.

British Railways, North Eastern Region, have placed orders as follows:—

Drummond-Asquith (Sales) Limited, Birmingham: two diesinking machines, and one cutter grinding machine, Shildon wagon works

Tersons Limited, London, N.3: conversion of Blaydon, Addison mineral yard to marshalling yard; remodelling of permanent way layout, earthwork and ballasting

L. C. Abdale & Son, Darlington: repairs to one bay of roof, Stockton South Goods Warehouse

British Railways, Southern Region, have placed the following orders:—

James Langley & Co. Ltd., Crawley: new substations at Hampton, Upper Halliford, Hounslow Junction, Bedfont Road, Staines, and Egham

A. Watson Limited, London, S.W.1.: steel piling, Staines River Bridge

Demolition & Construction Co. Ltd., London, S.W.1: extension of carriage shed, Slades Green; new track paralleling huts at Belmont, Carshalton, Grove Road, Durnsford Road, Balham, West Sutton, Morden South, West Croydon, Wallington, Bingham Road

L. & W. Whitehead Limited, London, S.W.9: new traction control room, London Bridge

Aubrey Watson Limited, London, S.W.1: platform extension at Slades Green, Sundridge Park, and Bromley North; renewal of dock surfaces, Nine Elms "A" Shed

British Railways, London Midland Region, have placed the following contracts:—

Wellerman Bros. Ltd., Sheffield 3: construction of reinforced-concrete gangways to dolphins at Walney Channel deep-water berths, Barrow-in-Furness

General Asphalt Co. Ltd., London, N.W.5: resurfacing of platforms Nos. 3, 6 and 7 at Euston

Sprosson & Babb Limited, London, N.19: staff lavatory and washing facilities at Willesden motive power depot

Val de Travers Paving Co. Ltd., London, E.C.4: paving of reconstructed departure platforms at Euston Station

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

53 commodes for coaching stock
53 flushing cisterns

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17412-D/I. They will be received up to 10 a.m. on February 19.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

124 axlebox,es 10 in. by 5 in. journals complete (b.g.)

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17253-D/I. They will be received up to 10 a.m. on February 19.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

880 axleboxes, 10 in. by 5 in. (b.g.) for b.g. coaching underframes and 16-ton axle four-wheel wagons but without dust shield

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17159-D/I. They will be received up to 10 a.m. on February 19.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

2,000 bogie horn cheek (b.g.) for b.g. bogie coaching underframes

520 horn cheek axle guards 1 ft. 4 in. long for I.R.C.A. electric trailer coaches and I.R.S. four-wheel stock (material high duty cast iron)

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17159-D/I (*a*), and will be received up to 10 a.m. on February 22.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for the following:—

Description of Stores	Specn.
Manganese Steel Liners as given below:—	*per description*
376 wedges liner for coupled axlebox	Manganese steel, 11-14 per cent
376 guide liners for coupled axlebox	,, ,,
46 liners for rubbing block	,, ,,
46 ,, ,, ,,	,, ,,
208 lateral wear liners (for hind axlebox guide)	,, ,,
928 liners for tender axlebox guide	,, ,,
Tender front drag casting liners as shown below:—	
116 liners, top	,, ,,
116 liners, side	,, ,,
116 liners, bottom	,, ,,
352 liner guides (top bottom) for tender rubbing block	,, ,,
116 liner guides (side) for tender rubbing block	,, ,,
58 liners, face, for tender rubbing block	,, ,,

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17145-D/I. They will be received up to 10 a.m. on February 22.

If the date for the receipt of any of the five above-mentioned sets of tenders invited by the Director General of Supplies & Disposals, New Delhi, does not allow sufficient time to obtain tender forms from India, firms may submit a quotation to India in their own letters, form or by telegram, so long as all essential particulars are given and provided that they simultaneously apply for tender forms and return them duly completed as quickly as

possible on the basis of advance quotations already submitted.

A copy of all the tender forms can be examined at the India Store Department, 32-44, Edgware Road, W.2, on application to the Railway Branch, and the drawings can be seen at the offices of Hodges Bennett & Co. Ltd., 59-60, Petty France, London, S.W.1, from whom copies may be obtained, if required, at a fixed price per sheet.

The Special Register Information Service, Board of Trade, Export Services Branch, reports that the British Embassy at Cairo has notified that notice has been published in the Egyptian State Railways *Weekly Bulletin No.* 2 of January 13 about a call for tenders for the supply of twenty 10-ton wagons for perishable goods, to Egyptian State Railways, Specification No. 638. Tenders can be submitted up to 11.30 a.m. on February 25.

It is understood that specifications can be obtained from the office of the Chief Inspecting Engineer to the Egyptian Government in London, 41, Tothill Street, London, S.W.1.

The Special Register Information Service, Board of Trade, Export Services Branch, reports that the British Embassy at Cairo has notified a call for tenders published in the Egyptian State Railways *Weekly Bulletin No.* 2 of January 13, and issued by the Egyptian State Railways Administration for 100 10-ton box wagons. The closing date for the receipt of tenders is 11.30 a.m. on March 11.

Copies of the specification (No. 637) may be obtained on application to the Chief Inspecting Engineer's Office, 41 Tothill Street, London, S.W.1.

The Special Register Information Service, Board of Trade, Export Services Branch, reports that the United Kingdom Trade Commissioner at Delhi has notified a call for tenders, issued by the Director General of Supplies & Disposals, Government of India, for 378 clip lock bar inside 90 lb.

The closing date for receipt of tenders is February 16. Tenders should be enclosed in two envelopes; the first should bear the tender number, date of opening and address, and enclosed in the second envelope addressed to Director General of Supplies & Disposals, Shahjahan Road, New Delhi, without any indication that a tender is within.

A copy of the tender document may be had on loan from the Branch (Lacon House, Theobalds Road, W.C.1).

The Special Register Information Service, Board of Trade, Export Services Branch, reports that the United Kingdom Trade Commissioner at Delhi has notified a call for tenders, issued by the Director General of Supplies & Disposals, Government of India, for 50 injectors.

The closing date for receipt of tenders is February 26. Tenders should be enclosed in two envelopes; the first should bear the tender number, date of opening and address, and enclosed in the second envelope addressed to the Director General Supplies & Disposals, Shahjahan Road, New Delhi, without indication that a tender is within.

A copy of the tender document may be inspected in Room 801, at Lacon House, Theobalds Road, W.C.1, until February 9, after which date it will be available for loan to United Kingdom firms in order of receipt of application.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

30,000 metal louvre strips upper 9⅛ in. long
25,000 do. 9½ in. long

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17147-D/I, and will be received up to 10 a.m. on February 24.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:

690 axleboxes (cast steel) No. 6 for 10 in. × 5 in. journal with dust shield covers but without groove liners (to be seam welded)

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/17355-D/I, and will be received up to 10 a.m. on February 12.

Notes and News

Cost Accountant Required.—Applications are invited for the post of cost accountant required by the Nigerian Government Railway. See Official Notices on page 167.

Works Manager Required.—A works manager is required by a rollingstock works in the East, specialising in the production of all-steel railway vehicles. See Official Notices on page 167.

Traffic Manager Required.—A traffic manager is required by the British Guiana Government, Transport & Harbours Department, for one tour of two years in the first instance. See Official Notices on page 167.

Vacancy for Railway Draughtsman—Surveyor.—Applications are invited for the post of railway draughtsman-surveyor, between 25 and 30 years of age, required by a firm of railway contractors. See Official Notices on page 167.

Cheap Friday Night Fares to London from North East.—British Railways, North Eastern Region, are issuing an especially cheap excursion fare to London from many stations in North Eastern England. In some cases the former cheap day excursion fare has been reduced by as much as 13s. 9d., as from Newcastle, Tynemouth, Cullercoats, Whitley Bay, and Monkseaton, whence it now is 44s. From Darlington and Stockton the new fare is 39s., instead of 48s. 9d. and 49s. 3d. respectively. The condition of travel with this type of ticket is use of a specified timetable night express on the Friday and return by a particular timetable night express on the Saturday.

Vacancy for Senior Draughtsman (Engineering).—A senior draughtsman (engineering) is required by the Nigerian Government Railway for one tour of 12 to 24 months in the first instance. See Official Notices on page 167.

Vacancies for Grades I and II Clerks.—Applications are invited for the posts of grade I and II Clerks required by the East African Railways & Harbours Administration, for tour of 40 to 48 months in the first instance with prospect of permanency. See Official Notices on page 167.

Vacancies for Assistant Mechanical Officers, Rhodesia Railways.—Applications are invited for assistant mechanical officers, between 28 and 35 years of age, for the mechanical department for duties in workshops or on the running side in charge of locomotive carriage and wagon maintenance. See Official Notices on page 167.

"London on Wheels" Exhibition.—Nearly 50,000 persons visited the British Transport Commission "London on Wheels" Exhibition at Euston Station, which was open from May 20, 1953, to January 30.

British Railways Coal, Iron, and Steel Traffic.—British Railways carried 3,165,650 tons of deep-mine and opencast coal last week, including 409,080 tons during the 48 hr. ended 6 a.m. on February 1. During the week ended 6 a.m. on January 23, 223,775 tons of iron and steel from the principal steel works and 317,600 tons of iron ore were conveyed.

R.O.D. Officers Annual Reunion Dinner.—Colonel Sir Michael Barrington-Ward will preside at the annual reunion dinner of officers of the Railway Operating Division, which is to be held at the Transportation Club, 44, Wilton Crescent, London, S.W.1, at 6.30 p.m. for 7 p.m., on March 3. R.O.D. Officers who wish to attend the dinner and who have not been notified direct, should get in touch with Mr. F. L. Castle, Director & General Manager, The Siemens & General Electric Railway Signal Co. Ltd., East Lane, Wembley.

Advance Booking for "Starlight Specials."—Advance bookings opened on February 1 for the 1954 "Starlight Special" eight- and fifteen-day excursions between London and Edinburgh and Glasgow. Tickets are obtainable at any of the main London termini and principal suburban stations, or from travel agents; advance bookings in Scotland are made at Glasgow St. Enoch and Edinburgh Waverley. The first of this year's overnight "Starlight Specials" will run on April 9 from Marylebone and St. Pancras and from Edinburgh Waverley and Glasgow St. Enoch.

Engineering Works on Tilbury Line: Effect on Train Services.—Subsequent to the recent announcement that a start was to be made on the civil engineering works on the London, Tilbury, & Southend line as a preliminary to electrification, the Eastern Region announces a revision of passenger train timings on the line as from February 8. The engineering works call for additional temporary speed restrictions; the effect of the timetable revision will be to increase by a maximum of 5 min. in both directions the time for the 40-mile journey between Fenchurch Street and Shoeburyness. Between Fenchurch Street, St. Pancras, and Upminster timings will remain unaltered; the additional 5 min. allowance being necessary on the Upminster-Southend Central section where the principal works are being undertaken. Up trains will leave Shoeburyness and Southend Central 5 min. earlier than at present. The revised schedules are planned to operate only for two months, and it is hoped that a reversion to normal schedules will be possible shortly before the Easter holiday period.

Institution of Locomotive Engineers: Visit to Cambridge University.—At the invitation of Professor J. F. Baker, Head of the Engineering Department of Mechanical Sciences, a meeting of the members of the Institution of Locomotive Engineers and their guests, will be held at Cambridge University on Thursday, March 11. The party will assemble at Liverpool Street Station, London, and travel by special train

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

TRAFFIC MANAGER required by BRITISH GUIANA GOVERNMENT Transport and Harbours Dept. for two-year tour in first instance. Salary, etc., £1,400 a year. Free passages, liberal leave on full salary. Candidates must be capable administrators with thorough knowledge of railway passenger and goods operating including time tables, duty rosters, train control rating and transport law. Candidates holding qualifications of the Institute of Transport are preferred. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M3B/34144/RA.

CLERKS GRADE II required by EAST AFRICAN RAILWAYS AND HARBOURS ADMINISTRATION, Commercial and Operating Departments, for tour of 40/48 months with prospect of permanency. Commencing salary, etc., according to age in scale £702 rising to £823 a year. Superannuation fund. Outfit allowance £30. Free housing or allowance in lieu. Free passages. Liberal leave on full salary. Candidates of good education should have had wide experience in both railway operating and commercial work. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M3B/28061/RA.

DUE to plant expansion important wagon builder desires Sales Engineer for Belgian Plant. Work to consist of estimating costs both material and labour, preparing detailed technical specifications, writing quotations, and general sales work both written and by personal contact. Spanish and French languages desirable. Technical training essential. Preference given to man willing to travel. Excellent future for man with right combinations of sales and technical abilities. Minimum age 25, maximum depending on experience but preferably not over 45. Excellent salary depending on qualifications. Reply BOX 89, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

A.E.C. LTD. require Designers and Draughtsmen for development of Diesel Trains. Premises at Boreham Wood, Herts. Work is in connection with a new project on behalf of British United Traction Co. Ltd. Automobile and railway experience would be an advantage. Permanent employment and pension scheme. Applications in writing to STAFF RECORDS OFFICE, A.E.C. Ltd., Windmill Lane, Southall, Middlesex, stating age, experience and salary required.

CLERK GRADE I required by EAST AFRICAN RAILWAYS AND HARBOURS ADMINISTRATION, Engineering Department, for tour of 40/48 months with prospect of permanency. Commencing salary, etc., according to age in scale £850-£931 a year. Outfit allowance £30. Superannuation fund. Free housing or allowance in lieu. Free passages. Liberal leave on full salary. Candidates must have good RAILWAY experience in general clerical duties on staff matters and be capable of supervising an office and dealing with correspondence. Applicants serving with British Railways would be eligible for secondment and should apply through their local officers. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M3B/33810/RA.

VACANCIES for ASSISTANT MECHANICAL OFFICERS, Rhodesia Railways. Applications are invited for Assistant Mechanical Officers for the Mechanical Department for duties in workshops or on the running side in charge of locomotive, carriage and wagon maintenance. Applicants must have served a recognised pupilage or apprenticeship on a railway and subsequently had drawing office, workshop, process planning or running maintenance experience in a supervisory capacity. The minimum qualification is the standard required for admission by examination as Associate Member of the Institute of Mechanical Engineers or accepted equivalent. Age about 28 to 35 years. Salary scale £900 basic rising by annual increments of £40 to £1,460 per annum, plus cost of living allowance now applicable at 20 per cent on basic salary. The commencing salary may be higher than the minimum, dependent on age, qualifications and experience. Avenue of promotion is to the District Grade on basic salary scale of £1,350—£50 annual—£1,750. There is a pension fund, and certain allowances are applicable. Applications, together with full particulars of training, subsequent experience, education and technical qualifications, etc., to be forwarded to the CHIEF MECHANICAL ENGINEER, Rhodesia Railways, P.O. Box 703, Bulawayo, Southern Rhodesia.

GUAQUI LA PAZ RAILWAY.—Assistant accountant. Qualifications: Man who has passed intermediate examination of recognised accountancy body preferred. Knowledge of railway accounts an advantage. Preferably single between 28/35 years of age. CENTRAL RAILWAY.—Traffic Learner for training as an official. Single. Between 21 and 25 years of age. Good general education with transportation experience either practical or theoretical. Knowledge of Spanish language preferable but not essential Apply SECRETARY OF THE PERUVIAN CORPORATION, 144, Leadenhall Street, London, E.C.3.

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SENIOR DRAUGHTSMAN (Engineering) required by the NIGERIAN GOVERNMENT RAILWAY for one tour of 12 to 24 months in first instance. Salary, etc., £1,254 rising to £1,560 a year. Gratuity at the rate of £150 a year. Quarters provided at rental of 10 per cent of basic salary. Outfit allowance £60. Free passages for officer and wife. Assistance towards cost of children's passages or grant up to £150 annually for maintenance in the United Kingdom. Liberal leave on full salary. Candidates must have extensive experience in preparation of design and working drawings for railway track layouts. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M2B/29981/RA.

COST ACCOUNTANT required by NIGERIA GOVERNMENT RAILWAY for tour of 12-24 months either (*a*) with prospect of pensionable employment at salary, etc., in the scale £750 rising to £1,480 a year or (*b*) on temporary terms at salary, etc., in the scale £864 rising to £1,752 a year with gratuity at rate of £100 or £150 a year. Commencing salary according to experience. Outfit allowance up to £60. Free passages for officer and wife and assistance towards cost of children's passages or grant up to £150 annually towards maintenance in this country. Liberal leave on full salary. Candidates should be members of one of the recognised bodies of professional accountants. Applicants serving with British Railways would be eligible for secondment under terms (*a*) and should apply through their local officers. Write to the CROWN AGENTS, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M3B/33211/RA.

WORKS MANAGER required for old established Rolling Stock Works in East, specialising in production of all steel railway vehicles. Commencing salary equivalent to £173 monthly. Provident fund, free house, car, medical attention and passages for family. Applicants, who should have had experience in similar capacity, should apply, in writing, to Box 96, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

RAILWAY Draughtsman-Surveyor required by large firm railway contractors, applicants must have ability to carry out site surveys, plot same in layout form to good working scale (detailing for manufacture of turnouts, etc., done by other draughtsmen); capable of full use of theodolite and level; duties to include site supervision of contract in progress; age 25-30 years; man with British Standard Specification experience preferred; conditions of employment to include provision of car, all travelling and general expenses; five-day week on rota system; comprehensive superannuation scheme, etc. Write in first instance, stating age, experience and salary required, to Box 93, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

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leaving at 9.47 a.m. for Cambridge. Members and their guests will have an opportunity of visiting various laboratories and workshops of the Engineering Department. Any essays describing this visit submitted by graduates under 25 years of age will be considered by the President of the Institution of Locomotive Engineers for a President's prize.

London Transport Musical & Dramatic Society.—The London Transport Players are giving three performances of the musical play "Bless the Bride," on Thursday, Friday and Saturday, February 18, 19 and 20, at the Scala Theatre, Charlotte Street, Tottenham Court Road, W.1, at 7 p.m.

Moscow-Peking Through Service.—It is reported that a through Moscow-Peking service was inaugurated on January 31, when crowds gathered at the beflagged Yaroslavsky Station in Moscow to see the train depart. The through journey is scheduled to take nine days, with departures from Moscow on Wednesdays and Sundays. No details of the route have been given, but it is presumably via Manchouli and Harbin. Change of train would be necessary in Manchuria unless there are arrangements for changing axles at the break-of-gauge point.

Railway Boxing Championships. — The British Railways 1954 Amateur Boxing Championships began on January 30 with the Scottish Regional eliminating contests in Glasgow. They are followed this month by those of the other Regions, at West Ham (Eastern Region), Crewe and Wolverhampton (London Midland), York (North Eastern), Clapham (Southern), and Birmingham (Western). The first inter-regional fixture will be the quarter-finals at Doncaster in March. The semi-finals in seven weights will be at York in April, and the other three semi-finals and the finals at the Royal Albert Hall, London, on May 4. Last year the competition was won by the Eastern Region of British Railways for the second year running.

Record Christmas Collection for the Blind at Euston.—The London Midland Region announces that the Greater London Fund for the Blind collected £430 round the Christmas trees at Euston. This is the highest sum ever collected at any one station and is £200 more than was collected at Euston the previous Christmas.

Passenger Concentration Scheme at Cromer.—Because it has become uneconomic to maintain two stations at Cromer, arrangements are being made by British Railways, Eastern Region, to close Cromer High Station and concentrate all passenger traffic on Cromer Beach. The reorganisation will justify improvements at Cromer Beach including modernisation of the ticket office, alterations to the parcels office, and a new bicycle store. Electric lighting will also be installed throughout. Other improvements, to facilitate traffic working, include the doubling of a portion of single line, lengthening of platforms, and a new engine turntable. The scheme will benefit most residents in Cromer and also the bulk of seasonal visitors who will arrive nearer the centre of the town and the beach.

Automatic Luggage Lockers at Victoria Brighton and Eastbourne.—Twenty-four automatic luggage lockers were brought into use by British Railways, Southern Region, at Victoria Station (No. 1 Platform) on February 1. They are 18 in. high, 16½ in. wide, and 2 ft. 5 in. deep, and as many articles as can be accommodated may be deposited for 6d. for a period of 24 hr. A similar number of lockers are also being provided at Brighton and Eastbourne Stations, and will be brought into use shortly.

Institute of Transport (Northern Ireland Section).—The monthly meeting of the Northern Ireland Section of the Institute of Transport was held in Belfast on January 21, the Chairman, Mr. G. B. Howden presiding. A paper entitled "Commercial Air Transport" was presented by Mr. M. Stuart-Shaw, Assisant General Manager, Aer Lingus, Dublin. After discussion on the paper the Shell Mex film "Powered Flight" was shown. A vote of thanks to the speaker was proposed by Mr. R. L. Carter, B.E.A. Manager, Northern Ireland, and seconded by H. P. Finch, Aerodrome Commandant, Nutt's Corner.

London Commercial Service (Passenger Travel): Annual Dinner.—The sixth annual dinner of British Railways London Commercial Service (Passenger Travel)

was held at the Headquarters Staff Dining Club, Paddington, on Friday, January 29. Mr. C. R. Panes, Chief Passenger Travel Representative, presided and the visitors included District Commercial Officers of British Railways Regions with headquarters in London. Mr. Panes proposed the toast of the London District Commercial Officers and touched briefly on the past season's successful results and the traffic prospects for 1954. Mr. N. H. Briant, District Operating Superintendent, Paddington, Western Region, responded, congratulating the members on their achievements and expressing confidence in the future.

New Offices of British Insulated Callender's Construction Co. Ltd.—British Insulated Callender's Construction Co. Ltd. recently moved into new premises at 30, Leicester Square, London, W.C.2; the telepone number is Trafalgar 7777. The move has been necessitated by the increasing activities of the company; it brings together various offices previously situated in different parts of London. The new office block has a gross floor area of 50,000 sq. ft.; the double frontage faces Leicester Square and Charing Cross Road. The central administrative offices of the parent company, British Insulated Callender's Cables Limited, remain at 21 Bloomsbury Street, London, W.C.1.

Forthcoming Meetings

February 5 (*Fri.*).—Railway Club, at 57, Fetter Lane, London, E.C.4, at 7 p.m. Annual general meeting.

February 5 (*Fri.*).—Institute of Transport, Western Section, at the Docks Office, Bristol, at 1.15 p.m. Paper on "Transport in the Far East," by Mr. S. W. Nelson.

February 6 (*Sat.*).—Stephenson Locomotive Society, Sheffield District, at the Y.M.C.A., Fargate, Sheffield, at 6.30 p.m. Paper on "Some Midland Rebuilding," by Mr. J. E. Lockington.

February 8 (*Mon.*).—Institute of Transport, in the Jarvis Hall, R.I.B.A., 66, Portland Place, W.1, at 5.45 p.m. Brancker Memorial Lecture, "The impact of the gas turbine on civil aviation," by Sir Miles Thomas.

February 8 (*Mon.*). — Historical Model Railway Society, at the headquarters of the Stephenson Locomotive Society, 32, Russell Road, London, W.14, at 7 p.m. Talk entitled "My twenty-five years of railway modelling," by Mr. P. Garland.

February 8 (*Mon.*).—Institute of Transport, York Graduate & Student Society, at the railway headquarters, York, at 7.30 p.m. Paper, "Meeting the customers' requirements," by Mr. J. A. R. Horsley, Head of Freight Development Section, Commercial Superintendent's Office, British Railways, North Eastern Region.

February 9 (*Tue.*).—South Wales and Monmouthshire Railways & Docks Lecture & Debating Society, in the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m. Paper on "Impressions of a visit to Australia," by Mr. H. H. Phillips, Chief Commercial Officer, British Transport Commission.

February 9 (*Tue.*).—Institute of Transport, Yorkshire Section, at the Great Northern Hotel, Leeds, at 6.45 p.m. Annual dinner and visit of President, Mr. John Elliot.

February 10 (*Wed.*).—Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W.1, at 5.30 p.m. Paper on "The measurement of train resistance," by Mr. H. I. Andrews.

February 11 (*Thu.*).—British Railways, Western Region, London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Paper on "Passenger Transport in London," by Mr. L. C. Hawkins, London Transport Executive.

February 12 (*Fri.*).—Institute of Welding, at the Holborn Restaurant, 218, High Holborn, W.C.2. Joint Dinner of London Branches.

February 12 (*Fri.*).—Institute of Transport, Northern Section, at the Royal Station Hotel, Newcastle, at 7 p.m. Annual dinner and visit of Mr. James Amos.

February 15 (*Mon.*).—Institute of Transport, Metropolitan Section, at 80, Portland Place, London, W.1, at 5.30 for 6 p.m. Symposium—London Transport: Railways—Mr. F. G. Maxwell: Roads—Mr. J. B. Burnell.

February 16 (*Tue.*).—British Railways, Southern Region, Lecture & Debating Society, at the Chapter House, St. Thomas' Street, London, S.E.1, at 5.45 for 6 p.m. A display of films.

February 17 (*Wed.*).—Railway Students' Association, at the London School of Economics & Political Science, Houghton Street, London W.C.1, at 6.15 p.m. Paper on "The rail-sea-air problems of Continental traffic," by Mr. R. E. Sinfield, Continental Superintendent, British Railways, Southern Region.

February 18 (*Thu.*).—Stephenson Locomotive Society, at 32, Russell Road, Kensington, W.14, at 6.45 p.m. Paper on "Massey Bromley and his locomotives," illustrated by lantern slides.

February 20 (*Sat.*).—Stephenson Locomotive Society, Leeds Section, at the Y.M.C.A., Albion Place, Leeds, at 2.30 p.m. Ten-minute papers by members and discussion.

Railway Stock Market

There has again been a good volume of business in stock markets, but buying, particularly in the industrial sections, appeared to be more selective. This is understandable because many shares seem to have risen to levels which allow for the higher dividends being anticipated in the market. Now the tendency is to favour shares which have been overlooked in the upward movement and especially shares of companies which should benefit a good deal from the end of E.P.L., assuming that earnings are maintained. The end of this tax means a bigger proportion of earnings will be available for reserves and dividend payments in the future.

British Funds have maintained their firmness after the terms of the National War Bond conversion offer, and are expected to go higher after the Budget, if growing hopes of a further reduction in income tax are borne out. A cut in income tax would, of course, benefit stock markets generally, because it means that dividends would be worth more to shareholders. In particular, gilt-edged stocks and other fixed-interest securities usually respond most to a reduction in the rate of income tax.

There was rather more business in foreign rails. Manila Railway issues showed a moderate revival of speculative buying which found the market short of stock. The "A" debentures strengthened to 76½, the "B" debentures to 66, while the preference shares firmed up to 8s. 1½d. and the 1s. ordinary shares were 4s. 1½d. All these are firmly held because one day there should be a reasonable settlement in respect of the company's big holding of Manila Railroad bonds. This would make Manila Railway debentures worth well over their current prices and could also mean good appreciation in the shares as well.

Antofagasta ordinary and preference stocks changed hands around 8¾ and 41½ respectively.

White Pass no par value shares have been fairly active around $28¾, and the convertible debentures were £101, though talk of new capital requirements has been current in the market. Canadian Pacific were $46⅝, the 4 per cent preference stock £67¾ and the 4 per cent debentures £88¾.

United of Havana second income stock changed hands around 42½ and the consolidated stock at 6¼ strengthened after an earlier small decline.

Nitrate Rails shares were 19s. 9d. and San Paulo units 5s. 4½d. Chilian Northern 5 per cent debentures marked 28 and Guayaquil & Quito 5 per cent bonds 45. Business up to 9 was recorded in Costa Rica ordinary stock and around 47½ in the 6½ per cent second debentures. Dorada ordinary stock remained at 60.

There was again a fair amount of business in Midland of Western Australia around 25½.

A feature among road transport shares was again the activity and strength of British Electric Traction 5s. "A" units, which advanced further to 42s. 1½d. on higher dividend expectations. The market is assuming that road transport companies are likely to join the general tendency these days to modify the very conservative dividend policy some companies have followed for a long period of years. West Riding have been firm at 27s., Southdown were 29s. 3d. and Lancashire Transport 48s. 9d. Business at 28s. 3d. was recorded in Potteries Motor Traction.

Engineering shares became firmer and a number of gains were recorded. Vickers moved up to 50s. on vague talk in the market of higher dividend possibilities, while in other directions, T. W. Ward rallied to 84s. 3d. also on higher dividend hopes, because for years earnings on the shares have been much in excess of the rate of dividend paid. Ruston & Hornsby was another share favoured on the possibility of a somewhat higher distribution.

Among shares of locomotive builders and engineers, Beyer Peacock were 30s. and Charles Roberts 5s. shares 18s. 9d. xd. At Glasgow, Hurst Nelson were 42s. In other directions, Birmingham Carriage were 30s. 7½d. and North British Locomotive 14s. 6d. Vulcan Foundry were 22s., Gloucester Wagon 10s. shares 17s. and Wagon Repairs 5s. shares 15s. 9d. G. D. Peters 5s. shares have been dealt in at 23s. 7½d.

There was very little buying of United Steel and Lancashire Steel ordinary shares, which remained at a discount, though Lancashire Steel preference shares attracted some investment support. The market is now inclined to the view that there is likely to be an interval of some months before the next steel issue is made.